**The Evolution of Peer Dynamics during Early Adolescence: Explicating the Role of School Context**

by

Nicole R. Brass

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Doctoral Committee:

Professor Allison M. Ryan, Chair
Professor Kai Cortina
Assistant Professor Justin Heinze
Professor Deborah Rivas-Drake

Nicole R. Brass

nrrausch@umich.edu

ORCID iD:  0000-0003-3766-7880

## Dedication

For my family. Everything I do is for you and because of you.

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**Abstract**

Early adolescence is characterized by significant change, and for some individuals, declines in academic and social well-being at school. Extant research has grappled with the degree to which different factors drive these declines – is it the significant physical, social, and emotional changes that occur during adolescence? Or are declines the result of making a transition from a small, intimate elementary school to a larger and unfamiliar middle school? This dissertation consists of three studies that aim to elucidate how adolescents' school context and development contribute to their academic and social adjustment at school. As peers become increasingly important and influential for adolescents' experiences at school, each study includes a focus on how context and development contribute to early adolescents' relationships with their peers. Thus, the three studies of my dissertation are guided by one overarching question: How does school context contribute to changing peer relations and adjustment in early adolescence?

In the first study, I utilized peer nominations to examine the behavioral profiles of high-status youth (i.e., popular and well-liked) across three years in early adolescence among two groups of students: one group who attended an elementary school then transitioned to a larger middle school and another group who attended the same school from kindergarten - eighth grade (Total $N = 680$). Results indicated that well-liked youth were consistently prosocial and high achieving across development and school context, but that there were some negative shifts in the behaviors of popular youth among the transition group when they made their transition from elementary to middle school. In study 2, using the same sample of youth, I examined the trajectories of students' self-reported beliefs about the behaviors that lead to social status as well

as the implications of these trajectories for students' classroom engagement. Like the results of the first study, there were similarities between the trajectories of transition and non-transition students, suggesting some normative developmental shifts in the behaviors associated with social status toward aggressive and rebellious behavior, but these maladaptive trends were more pronounced among transition students. In study 3, in a new sample of youth ($N$ = 1,400), I focused on school context more broadly by examining peer dynamics and adjustment among students who were the same developmental age, but they attended schools with different grade structures and timing for when they transitioned from elementary to middle school. Results highlighted the importance of students' grade span for their academic and social experiences at school; students who were at the top of their grade span (i.e., oldest in their elementary school) reported consistently more positive adjustment than students who were at the bottom or middle grade position of their school. Students' perceptions of leadership and feelings of anonymity mediated the relations between their grade position at school and their adjustment.

Taken together, the three studies of my dissertation enhance our understanding of how both early adolescents' development and aspects of their school context shape their experiences with peers and subsequent adjustment. Study results highlight a nuanced role of adolescents' school context for their adjustment and provide reasons to be optimistic during a life stage often characterized by declines. These findings provide potential avenues for how educators of adolescents might cultivate positive peer relationships and patterns of adjustment among their students.

# Chapter 1 Introduction

Early adolescence is characterized by an array of biological, social, emotional, and academic changes. For some individuals, this stage is characterized by declines in motivation, positive peer interactions, and social well-being at school (Brass et al., 2019; Eccles et al., 1993; Simmons & Blyth, 1987). Negative experiences that occur during early adolescence can compound into greater academic and social difficulties in late adolescence and adulthood (J. P. Allen et al., 2020; Simons et al., 2017). Thus, much research and attention has been devoted to understanding how youth's experiences at school can contribute both positively and negatively to their development and adjustment (Eccles & Roeser, 2011). Most of this research has investigated the experiences of students who made a transition from an elementary to a middle school. However, not all students attend schools with a transition and for students who do make a transition, there is great variety in the timing and nature of the transition (Cappella et al., 2019).

Therefore, the purpose of my dissertation is to examine the developmental trajectories of early adolescents with diverse schooling experiences. More specifically, my dissertation consists of three studies that aim to explicate the contributing role of one's school context in the development of their academic and socioemotional adjustment across the early adolescent years. In each study, I focus on youth's changing peer dynamics because in early adolescence, youth have an increasing desire to fit in and give more weight to their peers' opinions, making peers an important proximal context that influences development at school (Brown, 2004; Ryan, 2000). The three studies of my dissertation are guided by one overarching question: How does school context contribute to changing peer relations and adjustment in early adolescence?

## Overview of Studies

### *Study 1*

The focus of study 1 is to examine how the behavioral profiles of high-status youth change across early adolescence. Peers are increasingly important and influential during this stage, and peers who hold high social status (either for being very popular or being well-liked), are especially powerful for setting and maintaining the norms and values of the peer group (Cohen & Prinstein, 2006; Dijkstra & Gest, 2015). Advances in cognitive development that allow adolescents to better process future possibilities and opinions of others also produce a strong desire to fit in with one's peers and to avoid being rejected (Brown & Larson, 2009; Keating, 1990). Thus, in order to avoid rejection, adolescents look to their high status peers to guide their own beliefs and behaviors. It is concerning then, that whereas high status youth are academically oriented and prosocial in elementary school, high status youth in middle school tend to exhibit more rebellious behavior like aggression and defiance (Bukowski et al., 2000; Galván et al., 2011; LaFontana & Cillessen, 2002). However, little is known about the high status youth whose schooling does not involve a transition, so it is unclear the extent to which the negative changes in social status can be attributed to the transition to middle school or whether the changes are normative in adolescence.

In this first study, peer nomination data (where students nominate peers who they best believe fit behavioral descriptions), were used to examine patterns of social status in two samples of early adolescents – ESMS (students transitioned from elementary to middle school) and K8 (students attended the same school from kindergarten-eighth grade). Drawing on theory and prior research, we tested two developmental-contextual hypotheses for the potential changes in social status, the middle school culprit and top dog-bottom dog. The former suggests patterns will

decline for ESMS students as they make the transition to middle school but will be stable and more positive for K8 students. The latter suggests that social status patterns will be most adaptive for students who are the oldest in their school (e.g., elementary 6th graders and 8th graders) and less adaptive for the youngest students in their school (e.g., MS 7th graders). Furthermore, social status research has found distinct profiles and patterns of adjustment between youth who are well-liked and youth who are popular (Cillessen & Rose, 2005). Therefore, study 1 builds on prior research with an investigation of the profiles of two dimensions of social status (*popularity* and *likeability*) and their relations to a variety of positive and negative behaviors (*academic reputation*, *prosocial behavior*, and *physical aggression*).

In addition to providing information about the norms and values of particular peer groups, understanding the behaviors that garner social status is important because social status can have significant implications for adjustment. At the individual level, being popular has been found to be associated with positive consequences like increased self-esteem, prosocial behavior, and lower depressive symptoms (Cillessen & Mayeux, 2007; de Bruyn & van den Boom, 2005; Troop-Gordon & Ranney, 2014). However, there are also potential negative consequences like increased risky behavior, disruptive behavior, and disengagement in school (Hopmeyer Gorman et al., 2002; Mayeux et al., 2008; Troop-Gordon et al., 2011). Beyond the individual level, youth's perceptions of the behaviors of their popular peers can also have important implications for their own behavior via social contagion and wanting to adhere to social norms (Brechwald & Prinstein, 2011). The latter has received less attention; only a handful of studies have investigated whether students' perceptions of the behaviors of their popular peers influences their own behavior such as their aggression and engagement (Helms et al., 2014; Juvonen & Ho, 2008; Zhang et al., 2019).

***Study 2***

Therefore, the aim of study 2 is to gain insight about how changes in students' perceptions of the behavior of their popular peers contributes to their engagement in school with a focus on comparing these processes across ESMS and K8 contexts. By utilizing self-perceptions to measure status dynamics, the findings of study 2 may provide additional information about how students view different behavioral characteristics of social success that complements the information gained from peer nominations in study 1. Whereas in peer nomination research, the profiles of high status youth are inferred from associations found between social status and reputation nominations, students' self-reported beliefs about social success measure this association directly by asking students the extent to which they believe particular characteristics describe their high status peers (Kiefer & Ryan, 2011). Social-cognitive theory emphasizes that an individual's self-perceptions represent an important link between their social world and their subsequent beliefs and behaviors (Bandura, 1986). Thus, students' self-perceptions about the characteristics of social success likely have significant implications for their adjustment at school. To map onto the social status behaviors assessed in study 1, I examined students' endorsement of whether their socially successful peers were *academically responsible, sincere,* and/or *dominant*. I conducted multi-group parallel process growth models to investigate the relations between trajectories of social success beliefs and trajectories of behavioral and emotional engagement with an emphasis on examining differences between ESMS and K8 students.

***Study 3***

The aim of study 3 is to expand the investigation of how school context shapes peer relations and adjustment in early adolescence with exploration of the top dog-bottom dog

phenomenon (A. E. Schwartz et al., 2016; Simmons & Blyth, 1987). This phenomenon purports that the oldest students in their school (top dogs) experience a more positive school climate than the youngest students in their school (bottom dogs). Moreover, students of the same age (e.g., 5th graders) may report different experiences at school depending on their grade position at their school. For example, fifth graders who are the oldest students in their elementary school may perceive a more adaptive school climate as they are given opportunities to be role models to younger students compared fifth graders who just entered a middle school in an unfamiliar setting with many new and older peers. Thus, study 3 takes a broader approach to school context than studies 1 and 2 (only transition vs non-transition) by examining context differences from a top dog-bottom dog perspective. Data were collected from a large sample of youth in fifth and sixth grades who all attended schools within a rural, Midwest intermediate county school system. Within this larger system, students attended schools within districts that either included transitions from elementary to middle school after either fourth (K-4 to 5-8), fifth (K-5 to 6-8), or sixth grade (K-6 to 7-8). Thus, this design allowed for examination of differences in student adjustment based on the developmental timing and nature of the middle school transition as well as differences between students who were the same age, but held different grade positions at their school (e.g., top, middle, bottom). Study 3 concludes with mediation models that empirically examine two of the purported explanations – perceived anonymity and leadership - for why top dog students may report more positive school adjustment.

**Conclusion**

Peers play an increasingly important role in early adolescents' academic and social adjustment (Ryan & Shin, 2018). Although prior research indicates that peer relations and student adjustment become more negative over time (Eccles et al., 1993; Galván et al., 2011), the

role of the middle school transition and school context requires additional attention. Thus, the overarching goal of this dissertation is to address the question, "How does school context contribute to changing peer relations and adjustment in early adolescence?" Using a variety of longitudinal methods, this dissertation seeks to advance understanding about early adolescents' experiences with peers and their adjustment across a variety of school settings. Findings from this work have several potential implications for how teachers and schools can support the changing needs of students during early adolescence.

## Chapter 2 Changes in Social Status During Early Adolescence: Does School Context Matter?

Peer relations are a chief concern in early adolescence. Social status is an important aspect of such relations (LaFontana & Cillessen, 2010; Yan Li & Wright, 2014). In schools, hierarchies develop among peers in which some youth garner more attention from peers and have higher status than others (Hawley, 1999). The behaviors that accrue social status are important because youth with high status serve as role models for their fellow peers and influence the norms and values within the peer ecology at school (Dijkstra & Gest, 2015; Zhang et al., 2019). Research on changes in the behavioral correlates of status in early adolescence has predominantly examined children as they transition from smaller elementary schools into larger middle schools (e.g., Bowker et al., 2010; Galván et al., 2011). However, there is much variability in how middle-level schools are structured in the United States and many students do not make a transition into a larger middle-level school. To date, there has been almost no research on the development of social status comparing youth who have different schooling experiences in early adolescence (for an exception see Farmer et al., 2011).

Given the critical role of school context for many aspects of social development (E. M. Anderman, 2002; Crosnoe & Benner, 2015; Eccles, 2004), attention to the role of school context can expand our understanding of the development of social status. When students transition from a small elementary school into a larger middle school, they must adapt to rotating among different classrooms with multiple teachers and different peers, finding friends, and fitting into an overall much larger peer context. Students in a school environment without a transition

experience much more stability as they continue with having primarily one teacher and spending most of the day with the same classmates. These diverging school context experiences are likely to have implications for the development of social status. In the present study, we capitalize on a sample containing both students who made a transition from an elementary school (grades K-6) to a middle school (grades 7-8) and a group of students who attended the same school from Kindergarten through eighth grade (K-8). Using a three-year longitudinal design, we examine peer nominations of two types of status (*peer acceptance* and *popularity*) and three types of behavior (*academic reputation*, *prosocial behavior*, and *physical aggression*) to understand the changing social status profiles across the two school contexts.

**The Importance, Dimensions, and Overlap of Social Status during Early Adolescence**

In schools, social systems develop and students have different positions and reputations within those systems (Hawley, 1999; Rodkin & Ryan, 2012). At the individual level, a student's own social status has implications for their adjustment at school (Cillessen & Rose, 2005; Parker & Asher, 1987). At the group level, the behavioral characteristics that are associated with social status are informative about the nature of the larger peer context to which all students are exposed (Cappella et al., 2013; Ryan & Shin, 2018). Youth with high status are role models for their fellow peers and are powerful in setting up the norms in the peer system (Gommans et al., 2017), especially in adolescence, a stage when social status becomes more salient and valued (LaFontana & Cillessen, 2010; Rodkin & Ryan, 2012). Neuroscientists have documented heightened arousal in areas of the brain which perceive others' expressions, feelings, and opinions during adolescence, thus informing our understanding of why youth at this age are especially sensitive to what others think of them and give increasing attention to comparisons and judgments of peers' attributes and social status (L. Steinberg, 2014).

Theory and research have distinguished between different dimensions of social status. *Peer acceptance* refers to how well liked students are among their peers. This is typically measured by asking students, “who do you like most,” and “who do you like least,” then subtracting the nominations received for the latter from the nominations received from the former, although some studies just measure likeability (Rubin et al., 2007). *Popularity* refers to an individual’s social visibility and how well-known they are among their peers, typically measured by asking students, “who is most popular,” (Cillessen & Rose, 2005). Some studies also incorporate "who is least popular” (e.g., Bellmore, 2011). *Peer acceptance* and *popularity* are related, but distinct measures of status (e.g. Parkhurst & Hopmeyer, 1998), with correlations ranging from moderate to strong, [$r$ = .40-.74], (Cillessen & Borch, 2006; Sandstrom & Cillessen, 2006). Peer acceptance involves more of an affective judgment and personal preference whereas popularity is a judgment of students’ reputation (Parkhurst & Hopmeyer, 1998). Longitudinal studies across the transition to middle school yield mixed results with regard to changes in the correlation between popularity and peer acceptance with some studies finding little to no change (e.g., Dawes & Xie, 2017) and others finding that the relation decreases over time (e.g., Pouwels et al., 2018).

**Behavioral Correlates of Social Status during Early Adolescence**

During early adolescence, peer acceptance and popularity have been linked to different behavioral correlates, which are also commonly assessed via peer nominations (LaFontana & Cillessen, 2002). Nominations are aggregated at the group level by counting the number of nominations each student receives. Scores reflect the level of agreement by peers regarding status and behavior and confer each student’s reputation. Positive associations between high status nominations and reputations for different behaviors are interpreted as indicative of

characteristics that accrue social status in the peer group (Cillessen & Mayeux, 2004; Yan Li & Wright, 2014). There is increasing evidence that the behavioral correlates of social status vary across social contexts (Boor-Klip et al., 2017; Chang, 2004; Garandeau et al., 2011; McKellar et al., in press) supporting the idea that the behaviors that garner status reflect the unique demands, norms, and values perceived by members of that context (Galván et al., 2011).

We examined popularity and peer acceptance as they relate to three behaviors (academic, prosocial, and aggression). This also allowed for an examination of positive as well as negative behaviors and to give attention to the social as well as academic domains (Coie et al., 1990; Kiefer & Ryan, 2011). Academic adjustment has received much attention in research and theory on the middle school transition (Eccles et al., 1993), whereas social adjustment, especially aggressive behavior, has received much attention in research and theory on social status (e.g., (Cillessen & Mayeux, 2004; Stoltz et al., 2016). As we integrated these literatures in the present study and seek to provide an in-depth investigation of changes in social status in early adolescence, it seemed important to include this range of behaviors.

In early adolescence, peer acceptance is often positively linked with kindness and prosocial behavior and negatively related to aggression (Becker & Luthar, 2007; LaFontana & Cillessen, 2002; Newcomb et al., 1993; Rubin et al., 2007; Zimmer-Gembeck et al., 2005). Peer acceptance is also positively related to academic achievement (Chen et al., 1997; Wentzel, 2005; Zhang et al., 2018). Studies that have examined correlates of peer acceptance over time generally find consistent positive relations between peer acceptance and academic reputation and prosocial behavior in elementary and middle school (Coie et al., 1982; LaFontana & Cillessen, 2002; Lease et al., 2002). Studies examining trends of peer acceptance and aggression yield more mixed findings. Whereas one longitudinal study found consistent negative relations between peer

acceptance and aggression across the transition to middle school (Dawes & Xie, 2017), other longitudinal studies have found that the negative relation between peer acceptance and aggression weakens over time, suggesting that youth become more accepting of aggression during early adolescence (Bukowski et al., 2000; Cillessen & Mayeux, 2004).

The behavioral profile for popularity is more complex. Popularity is related to a combination of positive and negative behaviors (Luthar & McMahon, 1996; Puckett et al., 2008; Rodkin et al., 2000; Sandstrom & Cillessen, 2006). Many studies have documented positive correlations between physical aggression and measures of popularity in early adolescence (Bellmore et al., 2011; Cillessen & Borch, 2006; Juvonen et al., 2013; Lu, Jin, et al., 2018; Ojanen & Findley-Van Nostrand, 2014; Tseng et al., 2013). Yet, popularity has also been found to have positive associations with prosocial behavior (Bowker et al., 2010; Niu et al., 2016; Zhang et al., 2018) and, in a few cases, with academic achievement (LaFontana & Cillessen, 2002; Niu et al., 2016; Zhang et al., 2018). Across the middle school transition, when changes are detected they generally find that the popularity-aggression correlation increases and the popularity-academics/prosocial correlations decreases, indicating that as youth move into early adolescence, aggressive behavior is more likely, and academic/prosocial behaviors are less likely, to accrue status (Cillessen & Mayeux, 2004; Galván et al., 2011; Juvonen & Murdock, 1995; Rose et al., 2004; van den Berg et al., 2015). However, other studies have found the popularity-prosocial correlation to be stable during early adolescence (Bowker et al., 2010; Dawes & Xie, 2017; Niu et al., 2016) as well as the popularity-academic reputation correlation (LaFontana & Cillessen, 2002; Niu et al., 2016).

## The Role of School Context in Shaping Social Status during Early Adolescence: Two Hypotheses

To date, most longitudinal investigations of the changes in behavioral correlates of social status have examined youth when they transition into middle school. The present study contains both adolescents who have made a transition from elementary school to middle school between sixth and seventh grade (ESMS) and a group of adolescents who remained in the same school from kindergarten – eighth grade (K8). The transition from a smaller elementary school to a larger middle school brings many changes for students (Juvonen et al., 2004). In elementary school, students tend to stay with the same teacher and group of peers throughout the whole school day, whereas in middle school, students tend to move to different classrooms with different teachers and peers throughout the day (Cook et al., 2008). The K-8 school environment is comparable to the elementary context inasmuch as students having primarily one teacher and spend most of the day with the same classmates (McEwin et al., 2005). The consistent school context may lead to greater stability in the behavioral correlates of social status for students in K-8 schools compared to students who transition from elementary to middle schools. In line with the aforementioned research, we reviewed on changes in social status, if changes are detected in our middle school transition sample, they are likely to be negative (e.g., the popularity-aggression correlation will increase).

Negative trends would be consistent with the broader literature on students' development across the transition to middle school which indicates it is often a challenging time for youth (Eccles, 2004; Evans et al., 2018). "Stage-environment fit" is a predominant perspective used to explain early adolescent development and adjustment around the transition to middle school (Eccles et al., 1993). In this theoretical framework, maladjustment is a result of a mismatch

between the needs of early adolescents and the opportunities offered to them in the school environment. Specific to peer relations, students' friendships from elementary school are disrupted at a time when social relationships are particularly important. Students are thrust into a much larger setting where they typically have different peers in different classes, making it hard to establish new friendships and maintain old friendships from elementary school. When youth enter their new social environment, there is a need to figure out where they are going to "fit in" (Brown, 2004). As such, students may be inclined to jockey for social status to gain power over the new social resources afforded by this environment (Farmer et al., 2011; Pellegrini & Long, 2002). In general, there is less supervision in middle school compared to elementary schools due to the large size and structural features (Pellegrini, 2002) that make it more difficult for teachers to have close relationships with all their students (Midgley et al., 1989). It may be that these changes associated with the transition to middle school will make maladaptive changes in the behavioral correlates of social status more likely to occur.

Comparative research on early adolescent students in K-8 versus middle schools provides some evidence that adjustment is influenced by the middle school transition, but the empirical research base as it pertains to peer relations, especially social status, is limited in scope. A large-scale study in the 1970s followed students over time as they moved from sixth to seventh grade and found students from K-8 schools had higher self-esteem, social engagement, and grades compared to students who made a transition to a middle school (reviewed in Simmons & Blyth, 1987). Other studies have found that students in K-8 schools have higher self-esteem (Weiss & Kipnes, 2006) and greater school belonging (E. M. Anderman, 2002) compared to students in middle schools. It is speculated that K-8's may be more developmentally appropriate because the lack of a disruptive transition and smaller size facilitate better relationships with teachers and

students and foster a sense of academic community (A. E. Schwartz et al., 2011; Simmons & Blyth, 1987; Weiss & Kipnes, 2006). Yet, one study found that socially prominent students were more likely to be aggressive and students reported more bullying in sixth grade in rural K8 and K12 schools compared to middle schools, raising the possibility that staying with the same group of youth can bring challenges (Farmer et al., 2011). However, the small size and familiarity in rural schools may create different peer dynamics than suburban and urban school districts (Kulig et al., 2008). The view that is more often touted is that middle schools have a negative peer climate (Juvonen et al., 2004). From the adult perspective, K8 teachers and administrators generally report a more positive school social context than teachers and administrators in middle schools (Kim et al., 2014).

Thus, theory and research from the stage-environment fit, middle school transition, and K-8 schooling literatures give rise to the *middle school culprit hypothesis*. That is, the associations between social status and academic and prosocial behavior will decline whereas associations between social status and aggression will increase when students move from elementary to middle school. Once students are in middle school, the behavioral correlates of status will remain stable. The behavioral correlates of social status will be more stable for students who remain in a K-8 school throughout early adolescence. Given prior research has found more change with the behavioral correlates of popularity than peer acceptance, we expect the middle school culprit hypothesis to be more pronounced for popularity (although changes may be seen with peer acceptance-aggression which has shown change in some studies). *Figure 2.1* displays hypotheses for the behavioral correlates of popularity.

Another perspective that might provide insight on the role of school context in changes in social status profiles is the top dog-bottom dog (TDBD) phenomenon (A. E. Schwartz et al.,

2016). When students move from elementary to middle school, they transition from being "top dogs" to "bottom dogs" and can experience negative changes in their school experience due to their relative social position. It is speculated that top dogs have the advantage of being seen as role models and are given more opportunities for leadership in a familiar setting whereas bottom dogs are more likely to feel intimidated and insecure as the youngest in a new school (Blyth et al., 1983). Several studies provide support for the TDBD phenomenon as students who are at the top of a grade span report feeling less anonymous, experience less bullying, and have greater feelings of school safety and school belonging than those at the bottom (Blyth et al., 1983; Byrnes & Ruby, 2007; A. E. Schwartz et al., 2016; Simmons et al., 1979). The maturity gap perspective provides rationale that the TDBD phenomenon may apply to changing social status profiles. From this perspective, adolescents confer status to students who engage in non-compliant behavior as it represents asserting independence (Moffitt, 1993, 2006). The root cause of this dynamic is that adolescents have limited responsibilities and decision-making opportunities and turn to non-compliant behavior as means for asserting autonomy. Being a top dog may minimize this dynamic as the oldest students in their school are granted more responsibility and opportunities for leadership than younger students.

Thus, theory and research from the TDBD perspective give rise to the *top dog/bottom dog hypothesis.* According to this hypothesis, the behavioral correlates for social status will be more adaptive (greater positive associations between status and academic and prosocial behavior and less of an association between status and aggression) for 6$^{th}$ graders in K-6 compared to their same grade counterparts in K-8 schools given their "top dog" social position. In regards to developmental trends, (a) the positive associations between status and academic and prosocial behavior will decline and the association between status and aggression will increase when

students move from “top dogs” in elementary to “bottom dogs” in their first year in middle school, but rebound when students regain “top dog” status at the end of middle school, and (b) the positive associations between status and academic and prosocial behavior will progressively increase and associations between status and aggression will gradually decline for students who remain in a K-8 school as they approach “top dog” status in their school. Notably, sixth graders in a K-8 setting are not truly “bottom dogs,” but they still experience changes in their social position as they move from 6$^{th}$ to 8$^{th}$ grade in their school. The positive effects of being a top dog have been found to be larger in schools with larger “heap sizes,” or the number of grades below top dog students (A. E. Schwartz et al., 2016). Therefore, although K-8 students are not experiencing dramatic shifts in their relative roles like ESMS students, they will likely experience a gradual build-up of social benefits as they approach top-dog status (trends displayed in *Figure 2.1*). Again, given prior research has found more change with the behavioral correlates of popularity than peer acceptance we expect these patterns to be more pronounced for popularity (although changes may be seen with peer acceptance and aggression as that has shown change in some studies). Given there is no prior longitudinal study of the behavioral correlates of social status in K-8 and ESMS school contexts commencing in elementary school and following students through the last year in middle school, we do not conjecture whether changes are more likely to conform to the MSC or TDBD hypothesis. Moreover, knowledge about the nature and timing of developmental changes can inform whether school-based interventions are needed and when across school settings.

**Overview of the Present Study**

The present study investigated the correlations between two types of social status (*peer acceptance* and *popularity*) and three types of perceived behavior (*academic reputation*,

*prosocial behavior*, and *physical aggression*) in two groups of adolescents – those who made a transition from elementary to middle school and those who did not make a transition and remained in a K8 school. Using a three-year longitudinal design, we investigated the overlap of peer acceptance and popularity as well as the correlates of status that emerged in each school context in sixth through eighth grades. We examined whether the development of social status conformed to *the middle school culprit* hypothesis or the *top dog-bottom dog hypothesis.* Gender differences were explored, but not hypothesized given the inconsistent and often null findings in prior work (Evans et al., 2018; Rose et al., 2011).

## Method

### Participants and Schools

In year 1, the participants were 382 students from public schools in the Midwestern United States ($M_{age}$ = 11.48; 53.1% female; 43.6% Black, 44.4% White, 5.4% Hispanic/Latinx, and 6.5% other; 60% of students receiving free or reduced-fee lunch). These percentages were similar across all schools. Approximately half of the sample (50.3%) attended elementary schools containing grades kindergarten-sixth (referred to as the ES group, $N$ = 6 schools). The other half of the sample attended schools containing grades kindergarten-eighth (referred to as the K8 group, $N$ = 5 schools). The number of students in each grade level ranged from 40 – 50 in the elementary and K-8 schools. In year 2, the ES students transitioned to two larger middle schools for seventh and eighth grades, along with students from other, non-participating elementary schools. The number of students in the seventh grade at the two middle schools ranged from 190-200 students. We recruited all students in the seventh grade at the two middle schools as a high participation rate is critical for an accurate assessment of the school peer climate (Cillessen & Marks, 2017). This procedure increased our sample to 542 students (53.7%

female; 46.9% Black, 43.7% White, 4.3% Hispanic/Latinx, and 5.1% other). We tested for differences in all peer nomination variables between students new to our sample at year 2 and those who started at year 1. Students who joined the study at year 2 received fewer nominations for getting good grades, $t(364) = 2.20$, $p = .03$ and prosocial behavior, $t(364) = 2.96$, $p = .003$, than students who started the study at year 1. For years 2 and 3, approximately 67% of students were in a middle school and 33% were in a K8 school. In the elementary and K8 schools, students were in a single classroom with one teacher and the same classmates for most of the day. In middle schools, students rotated among teachers and had different classmates for different subjects.

After wave 1 in sixth grade, 78% of the original sample continued to wave 2 in seventh grade. This is comparable to other studies that have examined districts that serve a high percentage of mobile families (Rastogi & Juvonen, 2019; K. Schwartz et al., 2015). Independent samples t-tests or chi-square tests were conducted to compare retained students to those who left the study on gender, race, and the peer nomination variables. There were no significant demographic differences between these groups. Compared with the retained students, students who left our sample after wave 1 received less peer nominations for peer acceptance, $t(341) = 2.83$, $p = .005$; academic reputation, $t(380) = 2.20$, $p = .03$; prosocial behavior, $t(380) = 2.13$, $p = .03$; and more nominations for physical aggression, $t(380) = -2.40$, $p = .02$. Altogether this suggests that some of the most vulnerable and at-risk students were not retained in our sample, but by using full information maximum likelihood estimation (FIML) for our longitudinal analyses, we were able to include participants with at least one wave of data.

**Procedure**

The three waves of data survey data collection took place in the middle (~January) of students' sixth, seventh, and eighth grade school years during class time. Letters describing the project were given to all students to take home to their parents. If parents did not want their child to participate in the study, they were instructed to have their child return an attached opt-out form to the teacher, call the school, or use the phone number provided on the forms to call the primary researchers. Teachers checked with students to ensure that the letters were delivered home. The participation rates for waves 1-3 were 93%, 92%, 95%, respectively.

During survey administration, students were told that the purpose of the survey was to learn about their experiences at school, that the survey was not a test, that there were no right or wrong answers, and that their participation was voluntary. Students were assured that the information in the survey would be kept confidential. If students wanted to participate, they needed to sign an assent sheet. Survey instructions and items were read aloud by the research team while students read along and responded to survey questions. A blank sheet of paper was provided for students to cover their answers as they worked on the survey to keep their responses private. At the conclusion of each survey administration, participants were given the opportunity to choose two small gifts from a basket filled with a variety of school supplies. All procedures were approved by the Institutional Review Board at the University of Illinois (Study Title: Changes in Motivation and Adjustment in Early Adolescence: Exploring Differences between Students in K-8 Schools and Students who Transition to Middle School; Protocol Number: 10036).

**Measures**

Social status was assessed with peer nominations at each wave of data collection. The directions indicated for students to list as many peers in their grade that they believed fit the

description. Though elementary and K8 students had primary teachers and classrooms, they were instructed to think about any peers in their grade. Ten blank spaces were provided underneath each description for students to list the names of their peers. For *peer acceptance,* there were two items: "the kids I LIKE MOST to be around" and "the kids I LIKE LEAST to be around" (reversed). For *popularity,* the item was "the kids who are the MOST POPULAR." To accommodate for differing grade population sizes, nominations were standardized within grade.

Various behavioral reputations were assessed at each wave with peer nominations in the same manner as social status. For *academic reputation,* the item was "work hard and get good grades." For *prosocial behavior,* the item was "are really cooperative and willing to help others." For *physical aggression,* the item was "starts fights (push other kids)." Nominations for social behaviors were also standardized within grade.

**Analytic Strategy**

We began by generating correlations among our variables to examine overlap of our status indicators, stability of all variables over time, and to assess whether these vary by school type. Next, the correlations between each of the types of status and each of the behaviors at each grade level were compared between youth in ESMS and K8 schools. Calculation of intraclass correlation coefficients (ICCS) revealed that the position of variance that could be attributed to students' school ranged <1% - 14% for social status and between 2% - 17% for behavioral reputations. Thus, we used a Fixed Effects Modelling (FEM) approach, also known as dummy variable regression, including school affiliation indicators (0/1 dummy variables, one for each school in the data) in the model as predictor variables to account for the nested structure of the data. FEM is advantageous when there are too few clusters for a multi-level modelling approach (McNeish & Stapleton, 2016). Thus, all correlations presented in Tables 1 and 2 are partial

correlations that account for school membership. We performed Fisher's *r*-to-*z* transformations to determine whether there was a significant difference between the partial correlation coefficients calculated for ESMS versus K8 students at each grade level. Finally, to determine whether there were significant changes in the status-behavior correlations between grades and account for the dependent nature of the longitudinal associations, we utilized a structural equation modeling approach (Preacher, 2006). These analyses were conducted with MPlus version 7.4. Each status-behavior combination was run separately for ESMS and K8 students. Cluster-specific standard error estimates were used to account for students being nested in schools. Concurrent status-behavior correlations were first freely estimated, then three sets of equality constraints were added to the models one at a time ($6^{th}$-$7^{th}$ grade; $7^{th}$-$8^{th}$ grade; $6^{th}$-$8^{th}$ grade). We compared fit indices of each constrained model to the freely estimated model with chi-square difference tests (Satorra & Bentler, 2001). A significant chi-square test would indicate that the correlations that were constrained to be equal are significantly different from one another (Preacher, 2006).

## Results

### Overlap of Social Status and Stability of Reputations

*Table 2.1* presents the partial correlations of social status nominations broken down by school setting. For the most part, the two forms of social status were moderately, positively correlated at each grade in both school settings. One significant difference emerged between school configurations; the association between peer acceptance and popularity was stronger in ESMS schools compared to K8 in sixth grade ($z = 4.98$, $p < .001$). Further, this association significantly declined from sixth-eighth grade [$\chi^2(1) = 182.88$, $p < .001$] among ESMS students (*r*'s = .54, .29, .24), but increased over time for K8 students (*r*'s = .09, .18, .29) though this

change only trended toward significance [$\chi^2(1) = 3.25$, $p = .07$]. Regarding gender, there were no consistent differences in the associations between peer acceptance and popularity in the ESMS or K8 contexts (see *Table 2.3*).

The stability correlation coefficients of nominations received for social status across 6th thru 8th grades are presented in *Table 2.1*. Overall, the magnitude of the stability correlations for social status were higher in K8 schools at each grade (*r's* ranged from .66 to .77) compared to ESMS (*r's* ranged from .38 to .60; *z's* ranged from 2.84 – 6.01, all *p* values < .01*).* Although not shown in *Table 2.1*, we also examined the stability of behavioral reputations. The correlations for behavioral reputations were also higher in nearly all cases for K8 students across all grades (*r*'s ranged from .73 - .86) compared to ESMS students (*r*'s ranged from .39 - .73; *z's* ranged from 2.90 – 5.01, all *p* values < .01). The one exception was the stability correlation for aggression between sixth and seventh grade, which was similar for ESMS and K8 students ($z = .40$, $p = .69$).

**Behavioral Profiles of High-Status Youth**

Status-behavior correlations calculated at each grade in ESMS and K8 contexts are provided in *Table 2.2*. The profiles of students high in peer acceptance were similarly positive in both ESMS and K8 schools. For the most part, peer acceptance was positively related to academic and prosocial behavior and negatively related to aggressive behavior with a similar magnitude in both ESMS and K8 schools. The only significant difference was the association between peer acceptance and academic achievement that was stronger for middle school students in eighth grade than for K8 students, ($z = 2.14$, $p = .03$). Chi-square difference tests of model fit revealed only two significant differences in the behavioral correlates of peer acceptance over time and these were changes in the strengths of the associations rather than changes in direction. Specifically, the magnitude of the peer acceptance-aggression association increased between

sixth and seventh grade for ESMS students, [$\chi^2(1) = 4.88$, $p = .03$] and the magnitude for peer-acceptance-prosocial decreased between seventh and eighth grade for K8 students [$\chi^2(1) = 11.27$, $p = .001$]. Thus, given its mostly stable and positive nature, patterns of peer acceptance did not conform to either the MS Culprit hypothesis or the TDBD hypothesis.

There was variation across school contexts for the behavioral correlates of popularity. When students were in sixth grade, the association between popularity – academic achievement was positive for students in ES, but null for K8 students ($z = 3.13$, $p = .002$). The positive association between popularity and aggression was stronger for students in K8 schools compared to students in elementary schools ($z = -2.30$, $p = .02$). The association between popularity and prosocial behavior was positive among ES students but null among K8 students, though this difference only trended toward significance ($z = 1.67$, $p = .09$). No significant differences between school contexts emerged in seventh or eighth grade for the behavioral correlates of popularity.

Over time, for ES/MS students, popularity was positively associated with academic behavior at when they were sixth graders in elementary school, but this relation significantly declined and became null when students entered middle school for seventh grade [$\chi^2(1) = 491.76$, $p < .001$], and then rebounded to become positive again when students were in eighth grade [$\chi^2(1) = 36.73$, $p < .001$]. This pattern is in line with the "top dog" perspective as high-status students in the top grades in elementary and middle school had more positive behavioral profiles than when they were the "bottom dogs" as seventh graders in their first year in middle school (see *Figure 2.2*). The relation between popularity and prosocial behavior was strong and positive when students were in sixth grade, significantly declined in seventh grade [$\chi^2(1) = 17.58$, $p < .001$], and remained stagnant into eighth grade, suggesting more adherence to the MS Culprit

Hypothesis. However, popularity and aggression were positively associated across all 3 grades for students in ES/MS which did not conform to either hypothesis. The association between popularity and aggression surprisingly decreased significantly between sixth and seventh grade when students transitioned to middle school [$\chi^2(1) = 16.35$, $p < .001$], but was not significantly different between seventh and eighth grade.

For students in K8 schools, the patterns for all three behavioral correlates of popularity were in line with the TDBD hypothesis. The association between popularity and academic behavior was null when students were in sixth grade, significantly increased when students were in seventh grade [$\chi^2(1) = 4.30$, $p = .04$], and increased again to become significant and positive when students were in eighth grade and top dogs at their school [$\chi^2(1) = 4.58$, $p = .03$]. The association between popularity and prosocial behavior followed a similar pattern. Popularity-prosocial was null when students were in sixth grade and increased to become significant and positive when students were in eighth grade, though only the difference between seventh and eighth grade showed a significant increase, [$\chi^2(1) = 4.04$, $p = .04$].The association between popularity and aggression for K8 students significantly decreased overall from sixth to eighth grade [$\chi^2(1) = 16.28$, $p < .001$], though the sixth-seventh and seventh-eighth grade changes were not individually significant. There were no consistent patterns pertaining to gender in the correlates of social status that emerged in ESMS or K8 contexts (see *Table 2.4*).

## Discussion

Prior research examining changes in correlates of social status during early adolescence has predominantly examined youth as they transition from smaller elementary to larger middle schools (Bukowski et al., 2000; Galván et al., 2011).Without a comparison group, the contribution of school context to the behaviors that garner social status is unclear. By examining

developmental patterns in a sample that contained both students who made a transition from a small elementary school (grades K-6) to larger middle school (grades 7-8) and a group of students who attended the same school from Kindergarten-eighth grade, our findings contribute new knowledge about the role of school context in changes in correlates of social status in early adolescence. The developmental patterns for popularity varied between our two groups, indicating that the type of schooling context matters for the nature of changes in this dimension of social status.

**Changes in Behavioral Correlates of Status Across School Contexts**

In regard to how the school context might matter for the development of social status, we tested two hypotheses. We examined whether changes in correlates of social status were due to the middle school transition (*middle school culprit hypothesis)* and/or related to changing social positions relative to peers within a school (*top dog-bottom dog hypothesis, TDBD).* For popularity, there was support for the TDBD hypothesis. Specifically, at year 1, popularity was positively associated with prosocial and academic behavior for 6$^{th}$ graders in K-6 elementary schools whereas these associations were null for their same grade counterparts in K-8 schools. Hence, in line with prior work examining sixth graders who hold different grade positions (Cook et al., 2008), top dogs tend to report the most adaptive experiences at school. Further, for K8 students, the behavioral correlates of popularity became progressively more adaptive as they assumed "top dog" status in 8$^{th}$ grade. For ESMS students, the association of academics-popularity became more negative when students moved from "top dogs" to "bottom dogs" in middle school and rebounded when students regained their status as top dogs at the end of middle school. By 8$^{th}$ grade, when all students were "top dogs" in their school, there were no school type differences in any of the behavioral correlates of popularity.

There were two deviations from the TDBD pattern for the ESMS group. First, the developmental pattern for prosocial behavior-popularity conformed to the *middle school culprit hypothesis*. The positive association significantly declined in magnitude from sixth to seventh grade when students moved into middle school and remained low as students progressed from grades 7 to 8 within the same middle school environment. Second, the positive association between aggression and popularity declined from sixth to seventh grade indicating popular youth were less aggressive their first year in middle school. However, this association rebounded to a similar higher magnitude in eighth grade indicating that "top dogs" were more likely to be aggressive than "bottom dogs" in middle school.

Thus, our findings for popularity indicate stronger support for the TDBD phenomenon in the K-8 school setting compared to middle school. Compared to when students first enter a new school, when students reach the top grade in their school, social hierarchies may be more firmly established and students with high status do not need to rely as heavily on aggression to gain power (Juvonen & Galván, 2008; Pellegrini, 2002). It is interesting that we found support for this pattern for the changing profiles of popular youth in K-8, but not middle schools. Youth in K-8 schools have been together for many years, and we found popular youth were less likely to be aggressive and more likely to be prosocial as they moved towards and assumed top dog status in 8$^{th}$ grade. Possible explanations for why the profiles of popular youth in the ESMS group did not conform to this pattern are the two-grade composition and size of our middle schools. With many new students coming together, social hierarchies may not become firmly established within two years, but may be particularly salient as students try to establish and maintain their role within their larger social environment. Settings that are characterized by greater hierarchy can promote the emergence and maintenance of aggression (Garandeau et al., 2014) which may help explain

why popular middle school youth were similarly aggressive in seventh and eighth grade. Further, students are still getting to know each other, and popularity is still being negotiated in eighth grade. The correlations for popularity from the present study support this perspective (from 7th to 8th grade the $r$ = .76 for K-8 students compared to .60 for ESMS students).

Further, perhaps the status of "top dog" is more salient for 8th graders in a K-8 (as well as 6th graders in a K-6) as they have many younger grades below them compared to 8th graders in our middle schools who have just one grade below them. This could engender greater feelings of independence and leadership for 8th graders in K-8 compared to middle schools. For example, in several of the K-8 schools, 8th graders were partnered with 1st graders as "reading buddies" once a week, an experience that would likely make 8th graders feel more grown up. Such opportunities for leadership at school may minimize non-compliant behavior as a means for asserting independence and gaining popularity among peers (relevant to the maturity gap perspective; Moffitt, 1993). Notably, however, our ESMS popular youth did show the TDBD pattern with regard to academics. Perhaps for academics, students feel a shift in status from 7th to 8th grade as they have more experience with changing classes and meeting the demands of multiple teachers.

In contrast to popularity, the behavioral correlates of peer acceptance did not show very much change across 6th to 8th grade in either school context; there were positive associations with academic and prosocial behavior and negative associations with aggressive behavior. Our results deviate from some prior work that has shown the behavioral profile of peer acceptance becomes less positive during early adolescence (i.e., the negative association with aggressive behavior lessens, e.g., Bukowski et al., 2000). Whereas peer acceptance represents personal sentiment, popularity is more of a reputation-based construct, indicative of social standing and visibility among peers, which is perhaps why it showed more change during early adolescence. Further,

the similar patterns of peer acceptance found in ESMS and K8 support recent work which questions whether K8 schools inherently provide a more supportive and positive environment for peer relations than ESMS schools (Cappella et al., 2019).

Our findings paint a complex, but a more optimistic picture of changes in social status during early adolescence. Youth's personal sentiment are still drawn to prosocial, high achieving and non-aggressive peers despite the recognition that the popular students, who are highly visible and garnering much attention, have less adaptive profiles during this time. Interestingly, the association between peer acceptance and popularity showed divergent patterns in ESMS and K8 settings; for ESMS students, the relation declined over time whereas for K8 students, the relation increased. These differences may reflect that likeable youth are also likely to be popular when they are top dogs in their school and do not have to jockey for status. Our results highlight that social status is multi-dimensional (Cillessen & Rose, 2005; Parkhurst & Hopmeyer, 1998) and the inclusion of multiple measures is necessary for a full understanding of the nature and development of status dynamics.

**Stability of Correlates of Status Across School Contexts**

Our longitudinal data provided additional insights into the stability and relations of social status and behavior over time in two school contexts. First, social status and behavioral reputations were more stable for students in K-8 schools compared to our ESMS group. Intuitively, this makes sense as K-8 students experience a more stable school environment by remaining in the same building and having classes with the same group students, social hierarchies do not have to be renegotiated as they often are with school transitions (Brown, 2004; Pellegrini & Long, 2002). This finding is important in that it suggests when students move to a new school, they have a "fresh start" and the chance to redefine who they are in comparison to

students in K-8 whose reputations might be hard to change (Farmer et al., 2011; W. Wang et al., 2016). It may also be that once an individual's reputation is established among their peers, their behavior is interpreted through a specific lens and if their behavior deviates from expectations, it is interpreted as being accidental or external through reputational bias (Hymel, 1986). This is especially true for individuals who are not well-liked; any change towards positive behavior may not be perceived as a "real change." For students who are seen in a negative light in a K8 environment where students are surrounded by the same small group of peers throughout their schooling, this could be especially challenging (W. Wang et al., 2016).

The association between popularity and physical aggression was significant and positive at all grade levels in both school contexts; however, changes in the magnitude of this association varied across ESMS and K8 settings. Similar to prior longitudinal work (e.g., Cillessen & Mayeux, 2004), students' reputation for being aggressive was quite consistent (*r*'s ranged from .52 - .86). In future work, it could be insightful to consider how behaviors interact to predict future levels of status (Troop-Gordon et al., 2011). For example, it may be that aggressive students accrue popularity only when they are also high in prosocial behavior; it is the combination of dominance and cooperative alliances that boosts a popular reputation.

**Strengths, Limitations, and Future Directions**

There are several noteworthy strengths to our study. First, our comparative sample allowed us to uncover unique developmental patterns in different school contexts. Our findings align with a growing literature regarding the role of context in shaping social status (Ryan & Shin, 2018). Prior work examining the role of context has predominantly focused on the classroom (e.g., Dijkstra & Gest, 2015); our findings highlight malleability for popularity at the school level. Second, our three-year design followed students from 6$^{th}$ to the end of 8$^{th}$ grade.

Often middle school transition studies only follow students through the first year in middle school (e.g., Bellmore et al., 2011; Bowker et al., 2010; Farmer et al., 2011). Similarly, much prior work on social status has been cross-sectional (Galván et al., 2011; Vaillancourt & Hymel, 2006). Our longitudinal design proved critical for a full understanding of how TDBD and middle school effects unfold across early adolescence. Finally, prior work on the TDBD phenomenon has relied on self-reports (A. E. Schwartz et al., 2016; Simmons & Blyth, 1987). With peer nominations, we were able to show that the TDBD phenomenon goes beyond individuals' own views of their adjustment and impacts popularity dynamics.

Our study also has limitations that should be considered. We collected data only once per school year. Some prior research has shown that adolescents' academic and social adjustment can change within a school year from the fall to the spring (North et al., 2019). Thus, there may have been within-year changes that went undetected in our study. It is possible that we would have seen a stronger pattern of maladaptive effects of the transition to middle school if we collected data earlier in the school year. Another potential limitation is our use of single items for some of our peer nomination measures. Peer nominations are time-consuming to collect and some of the principals of our participating schools were hesitant about including negative items. Due to these practical limitations, we did not include peer nominations of "least popular" or multiple indicators of aggressive behavior. However, single item peer nomination measures are not as problematic as single-item survey items in terms of reliability because they derive from ratings of all participating students (Cillessen & Marks, 2017). Nonetheless, it would have been informative to have ratings on who was unpopular because students who have a low score on our "most popular" item could be low or average in popularity. It would be interesting to see if there were unique patterns for unpopularity compared to popularity (Bellmore, 2011). Another

limitation is that we only measured physical aggression. Additional measures of relational aggression or distinctions between proactive and reactive aggression could have provided additional insights (Card & Little, 2006). Popularity has been found to be positively related to proactive aggression and negatively related to reactive aggression over time (Stoltz et al., 2016). Perhaps aggression was interpreted as more reactive upon the entrance to middle school and therefore was not viewed favorably. Future research should further investigate trends of both types of aggression across school contexts.

**Implications and Conclusion**

In schools, social systems develop with some youth having higher status than others (Hawley, 1999; Rodkin & Ryan, 2012). There is much concern from educators and parents about peers in general, and social status in particular, during the early adolescent years (L. Steinberg, 2014). Our results provide several new insights with important implications. First, youth high in peer acceptance have positive profiles throughout early adolescence in both school contexts. It is important to draw attention to positive patterns for early adolescents as stereotypically this is a stage seen as challenging and difficult. Second, changes over time in popularity varied by school context. In K-8 schools, attention to popularity dynamics at grade 6 seems most crucial. As students who are further from top dog status, sixth graders may get overshadowed by the older students in their school, feel less important and have fewer leadership opportunities. Educators should examine how they are building community and supporting autonomy for these students in the K-8 setting. In contrast, sixth grade students in K-6 exhibited more positive profiles. There has been much attention given to increasing students' feelings of relatedness in middle school (Brass et al., 2019; Eccles et al., 1993). There has been less attention in middle school reform or programming regarding social status dynamics among students, but this is an important

aspect of the peer ecology as well. An exception is the Supporting Early Learning And Success (SEALS; Farmer et al., 2013) intervention that offers training and instruction to teachers on the nature of peer dynamics and groups using a framework guided by stage-environment-fit and developmental science. SEALS has been shown to positively affect the popularity norms for academic effort in school among early adolescent students in middle and K8 schools (Hamm et al., 2014). Our results suggest this type of intervention is warranted especially for students when they are not top dogs (i.e., 7$^{th}$ graders in a middle school or 6$^{th}$ graders in a K8) and popularity is less likely to be characterized by high academic achievement. Ensuring that teachers have the knowledge and resources to cultivate positive peer dynamics and provide additional support to younger students is an important endeavor. In conclusion, this study is the first to investigate how different school contexts affect how academics, prosocial, and aggressive behaviors correlate with social status. We hope it paves the way for future work that ultimately will provide insights into how educators can best support early adolescent development in schools.

*Table 2.1 Correlations and Descriptives for Social Status by School Type*

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Peer Acceptance | | | | | | |
| 1. 6th Grade | -- | .70** | .57** | .09 | .27** | .34** |
| 2. 7th Grade | .44** | -- | .70** | .14 | .18* | .35** |
| 3. 8th Grade | .23** | .48** | -- | .02 | .12 | .29** |
| Popularity | | | | | | |
| 4. 6th Grade | .54** | .21* | .05 | -- | .68** | .57** |
| 5. 7th Grade | .34** | .29** | .23* | .49** | -- | .76** |
| 6. 8th Grade | .25* | .31** | .24** | .38** | .60** | -- |
| ESMS | | | | | | |
| *M* | .03 (.84) | .01 (1.69) | .01 (1.91) | .08 (2.46) | .01 (1.96) | .01 (1.95) |
| *SD* | .15 (4.89) | .02 (3.74) | .02 (3.16) | .11 (3.39) | .02 (3.92) | .03 (4.50) |
| K8 | | | | | | |
| *M* | .03 (.78) | .04 (1.37) | .04 (1.48) | .06 (2.19) | .05 (1.68) | .06 (2.20) |
| *SD* | .12 (4.38) | .11 (4.34) | .12 (4.82) | .10 (3.66) | .08 (2.96) | .08 (3.27) |

*Note*. Correlations for elementary/middle school students are reported below the diagonal and correlations for K8 students are reported above the diagonal. Numbers in parentheses represent the actual number of nominations each student received in ESMS or K8 whereas means and standard deviations outside of the parentheses represent the proportions calculated when standardized within grade population. ** indicates $p < .01$, * indicates $p < .05$.

*Table 2.2 Behavioral Correlates of Status Over Time by School Type*

| | 6th Grade | | 7th Grade | | 8th Grade | |
|---|---|---|---|---|---|---|
| Social Status | ES | K8 | MS | K8 | MS | K8 |
| Peer Acceptance | | | | | | |
| Academic | $.34_{1a}$** | $.48_{1a}$** | $.37_{1a}$** | $.40_{1a}$** | $.40_{1a}$** | $.22_{1b}$** |
| Prosocial | $.40_{1a}$** | $.54_{1a}$** | $.39_{1a}$** | $.50_{1a}$** | $.45_{1a}$** | $.34_{1a}$** |
| Aggression | $-.25_{2a}$** | $-.39_{2a}$** | $-.44_{2a}$** | $-.41_{2a}$** | $-.30_{2a}$** | $-.38_{2a}$** |
| Popularity | | | | | | |
| Academic | $.31_{1a}$** | $-.002_{1b}$ | $.07_{1a}$ | $.04_{1a}$ | $.28_{1a}$** | $.14_{1a}$* |
| Prosocial | $.19_{1a}$* | $.02_{1a}$ | $.11_{1a}$* | $.11_{1a}$ | $.12_{2a}$* | $.20_{1a}$ ** |
| Aggression | $.29_{1a}$** | $.49_{2b}$** | $.20_{2a}$** | $.32_{2a}$ ** | $.28_{1a}$** | $.22_{1a}$ ** |
| *N* | 192 | 190 | 366 | 177 | 323 | 181 |
| *df* | 185 | 184 | 363 | 171 | 320 | 175 |

*Note.* Within each row, partial correlations that are significantly different ($p < .05$) between elementary/middle school students and K8 students at a particular grade are represented with letter subscripts. Within each column, partial correlations that are significantly different within status and school type at each grade level ($p < .05$) are represented with number subscripts. ** indicates correlation coefficient is significant at $p < .01$, * indicates correlation is significant at $p < .05$.

*Table 2.3 Overlap of Social Status by Gender within School Context*

| ESMS | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. W1 Peer Acceptance | -- | .49 | .14 | .51 | .36 | .36 |
| 2. W2 Peer Acceptance | .42 | -- | .49 | .21 | *.43* | .40 |
| 3. W3 Peer Acceptance | .33 | .47 | -- | *-.11* | *-.04* | *.12* |
| 4. W1 Popularity | .55 | .08 | *.21* | -- | .53 | .40 |
| 5. W2 Popularity | .32 | *.19* | *.34* | .40 | -- | .67 |
| 6. W3 Popularity | .21 | .29 | *.40* | .25 | .56 | -- |
| K8 | | | | | | |
| 1. W1 Peer Acceptance | -- | *.81* | .66 | .12 | *-.09* | .20 |
| 2. W2 Peer Acceptance | *.53* | -- | .71 | -.11 | *-.03* | .25 |
| 3. W3 Peer Acceptance | .58 | .62 | -- | .05 | .20 | .42 |
| 4. W1 Popularity | .08 | .18 | -.10 | -- | .84 | .53 |
| 5. W2 Popularity | *.32* | *.34* | .15 | .74 | -- | .72 |
| 6. W3 Popularity | .22 | .43 | .21 | .62 | .76 | -- |

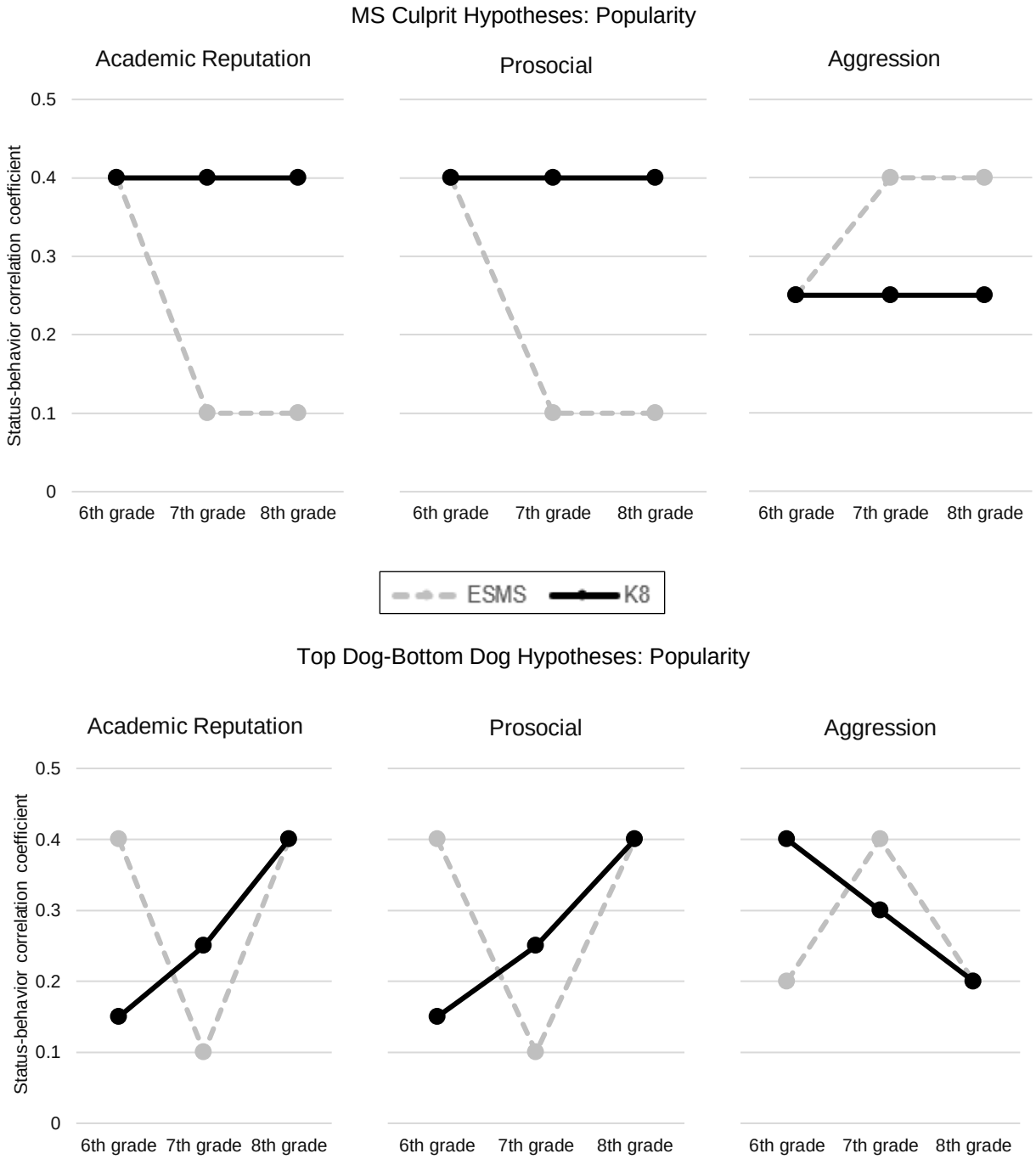
*Note*. Correlation estimates for girls are reported below the diagonals. Estimates for boys are reported above the diagonals. W1 refers to sixth grade; W2 refers to seventh grade; W3 refers to eighth grade. Italicized estimates indicate a significant difference at $p < .05$ between boys and girls within either the ESMS or K8 context.

*Table 2.4 Behavioral Correlates of Status by Gender within School Context*

| | ESMS | | | K8 | | |
|---|---|---|---|---|---|---|
| | Girls | Boys | Fisher's *r*-to-*z* | Girls | Boys | Fisher's *r*-to-*z* |
| Peer Acceptance | | | | | | |
| W1 Academic | .31 | .34 | *z* = -.22 | .34 | .61 | *z* = -2.04* |
| W1 Prosocial | .44 | .33 | *z* = .85 | .47 | .64 | *z* = -1.42 |
| W1 Aggression | -.16 | -.28 | *z* = .83 | -.38 | -.45 | *z* = .49 |
| W2 Academic | .36 | .36 | *z* = .00 | .43 | .36 | *z* = .52 |
| W2 Prosocial | .40 | .32 | *z* = .84 | .54 | .42 | *z* = .98 |
| W2 Aggression | -.61 | -.15 | *z* = -5.24** | -.13 | -.46 | *z* = 2.29* |
| W3 Academic | .51 | .23 | *z* = 2.90** | .14 | .24 | *z* = -.65 |
| W3 Prosocial | .53 | .32 | *z* = 2.28* | .30 | .31 | *z* = -.07 |
| W3 Aggression | -.33 | -.25 | *z* = -.77 | -.47 | -.34 | *z* = -.98 |
| Popularity | | | | | | |
| W1 Academic | .15 | .48 | *z* = -2.44* | -.12 | .19 | *z* = -2.04* |
| W1 Prosocial | .12 | .34 | *z* = -1.53 | -.06 | .14 | *z* = -1.31 |
| W1 Aggression | .21 | .42 | *z* = -1.54 | .55 | .42 | *z* = 1.11 |
| W2 Academic | .05 | .08 | *z* = -.28 | .14 | -.07 | *z* = 1.32 |
| W2 Prosocial | .14 | .05 | *z* = .83 | .15 | -.02 | *z* = 1.07 |
| W2 Aggression | .10 | .35 | *z* = -2.49* | .27 | .55 | *z* = -2.13* |
| W3 Academic | .51 | -.01 | *z* = 5.05** | .19 | .002 | *z* = 1.20 |
| W3 Prosocial | .21 | .02 | *z* = 1.70 | .21 | .15 | *z* = .39 |
| W3 Aggression | .06 | .48 | *z* = -4.08** | .40 | .15 | *z* = 1.71 |

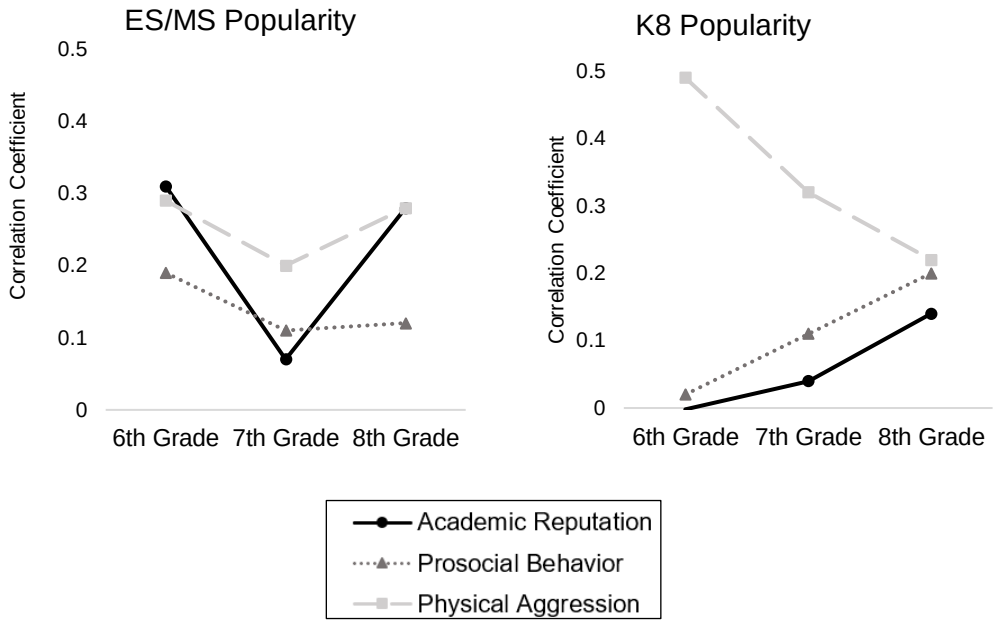
*Note.* Estimates represent partial correlations that account for nesting within schools. W1 indicates status-behavior correlations in sixth grade, W2 indicates status-behavior correlations in seventh grade, and W3 indicates status-behavior correlations in eighth grade. Fisher's r-to-z transformations were calculated between boys and girls within ESMS and within K8 contexts. * $p < .05$, ** $p < .01$

*Figure 2.1 Hypothesized Trends for Behavioral Correlates of Popularity*




*Note*. ESMS refers to elementary/middle school student sample and K8 refers to K-8 student sample.

*Figure 2.2 Longitudinal Results of Behavioral Correlates of Popularity by School Type*




*Note*. ES/MS refers to elementary/middle school student sample and K8 refers to K-8 student sample.

## Chapter 3 Developmental Trajectories of Students' Beliefs of Social Success and Their Associations with Adjustment

Peers represent an important proximal context that influences development at school during early adolescence (Crosnoe & Benner, 2015; Ryan, 2000; Wentzel, 2017). Yet, peers of early adolescents do not have equal power for influencing school beliefs and behaviors; rather, some of the greatest power lies with their peers who are viewed as socially successful – those that are popular, well-liked, and have lots of friends (Cohen & Prinstein, 2006; Gommans et al., 2017). The reputations and behaviors of socially successful individuals in a school provide an important window into the norms and values of the peer group. These social dynamics also have important implications for students' adjustment and experiences at school (Bellmore, 2011; Engels et al., 2019). Thus, beliefs about the characteristics of social success and the associations with school adjustment are critical components of adolescent development.

Throughout adolescence, especially during middle school, high status youth have been described as aggressive, attractive, dominant, and rebellious (Adler & Adler, 1995; Closson, 2009; LaFontana & Cillessen, 2002; Marten, 1997; van den Berg et al., 2019). One notable exception is work from Kiefer and Ryan (2011) which investigated trajectories of students' reported endorsement of the behavioral characteristics of their socially successful peers who have lots of friends and get along with others across early adolescence. Results indicated that although students' endorsement that their dominant and disingenuous peers were socially successful increased, and that their endorsement for their sincere and responsible peers decreased, sincerity was the most endorsed trait of social success at almost all waves in the

study. These findings present a more nuanced and optimistic view of peer relations during adolescence. Though there was some evidence of concerning developmental trends, students had the most positive perceptions about their peers who were prosocial, honest, and loyal.

However, like most prior studies with samples of early adolescents, this study only examined the beliefs of students who made a transition from an elementary school to a middle school. The transition to middle school has been described as a potential culprit for creating an environment which allows negative behaviors to flourish and garner status (Galván et al., 2011; Pellegrini & Long, 2002). Without a comparison group of students that did not experience a transition to middle school, the role of school context is not fully understood. Further, little is known about how students' beliefs about the characteristics of social success are linked with changes in their engagement.

Thus, the present study capitalized on a sample that contained two groups of youth – one group that made a transition from a small elementary school to a larger middle school after sixth grade (ESMS) and one group that remained in the same school from kindergarten – eighth grade (K8). With an emphasis on comparing the experiences of ESMS and K8 youth, the present study had three primary aims: 1) examine the trajectories of students' perceptions of the characteristics associated with social success in early adolescence, 2) examine associations between these perceptions and students' school engagement trajectories, and 3) assess the relative ranking of behaviors associated with social success. Specifically, we examined how changes in students' perceptions of their socially successful peers – the extent to which they believed their *academically responsible, sincere,* and *dominant* peers were the individuals in their grade who had lots of friends and get along with others – were associated with changes in two indicators of engagement (*behavioral engagement* and *emotional engagement*) across sixth-eighth grade.

**Changes in Behavioral Profiles of Social Success During Early Adolescence**

Social success is a contextually based phenomena; different behaviors tend to garner status across different settings and stages of development based on the unique demands, norms, and values perceived by members of that social setting or group (Boor-Klip et al., 2017; Chang, 2004; Galván et al., 2011; Garandeau et al., 2011). Both cross-sectional and longitudinal studies have found that behavioral profiles of high status youth become more maladaptive when students transition from elementary to middle school. Specifically, compared to elementary school, popularity in middle school is characterized by more aggression (Bowker et al., 2010; Bukowski et al., 2000; Cillessen & Borch, 2006; Cillessen & Mayeux, 2004; LaFontana & Cillessen, 2002; Rose et al., 2004; van den Berg et al., 2015) and antisocial behaviors (Galván et al., 2011; Kiesner & Pastore, 2005; North et al., 2019). At the same time, positive behaviors like academic engagement and getting good grades become less likely to accrue status (Galván et al., 2011; North et al., 2019; Véronneau et al., 2010).

This negative shift in behaviors that confer social success during early adolescence may reflect tension resulting from the "maturity gap." The "maturity gap" represents the tension that adolescents feel as they try to gain independence from their families, but are not yet mature enough to have full rights and responsibilities from society (Moffitt, 1993, 2006). As a result, adolescents are more drawn towards peers that embody autonomy and less childlike behaviors. Adolescents who engage in behaviors that are perceived as rebellious against adult authority, such as aggression and disruptive behavior, become more attractive whereas compliant behavior like trying hard in school becomes less attractive (Juvonen & Murdock, 1995). Upon the transition to middle school, when adolescents are thrust into a new environment with many new peers and need to re-establish social hierarchies, aggression and dominance may be viewed as

particularly effective means to gain power and status among one's peers (Pellegrini & Long, 2002). Though K8 students do not experience the disruption of a school transition, there is evidence, albeit quite limited, that there may also be a negative shift in perceptions of social success in K8 contexts (Brass & Ryan, in press; Farmer et al., 2011); but, the negative trends of changes in social adjustment are not as severe as those found in ESMS contexts (Harter et al., 1992; Weiss & Kipnes, 2006). Taken together, the maturity gap framework provides hypotheses regarding the developmental patterns of social status characteristics - that students will increase their endorsement for negative behaviors like dominance and lower their endorsement for positive behaviors like academic responsibility.

However, there are important nuances to consider especially regarding adolescents' endorsement of prosocial behavior as a characteristic of social success. Though some studies have found that prosocial behavior becomes less likely to accrue status in adolescence (Dawes & Xie, 2017; van den Berg et al., 2015), the majority of studies find that prosocial behavior is a strong and consistent predictor of social status during both elementary and middle school (Bowker et al., 2010; LaFontana & Cillessen, 2002; Lu, Li, et al., 2018; Mayeux & Kraft, 2018; North et al., 2019; Wolters et al., 2014). According to the social skills model, prosocial behavior is considered an important prerequisite for social status; youth who display prosocial behaviors are consistently viewed as more popular than youth who display few prosocial behaviors regardless of context (Stormshak et al., 1999; Wright et al., 1986). The social-skills model is useful for interpreting the results of Kiefer and Ryan (2011). That is, despite other changes with dominance and academic responsibility, socially successful youth were consistently perceived to be prosocial and sincere. These patterns were further confirmed by their analyses of the relative ranking of behaviors that described social success; sincerity was consistently ranked as the most

endorsed behavior despite increases in endorsement of dominance and physical athleticism and attraction. Thus, we expected that although there may be an overall negative shift in the behavioral profiles of social success, students' endorsement of sincerity would remain strong and positive across the early adolescent years.

**Relations Between Students' Perceptions of Social Success and Adjustment**

Furthermore, a unique contribution of the present work is that we examined how a specific individual's changing endorsement of characteristics that describe socially successful youth (as opposed to aggregated peer-reports of these associations) shapes that individual's engagement over time. Understanding the social motivation and precursors of adjustment is important because school adjustment often declines during early adolescence (Eccles et al., 1991; Juvonen et al., 2004; M. Wang & Eccles, 2012b). Specifically, compared to elementary school, students in middle school tend to report lower student engagement (M. Engels et al., 2019; Yibing Li & Lerner, 2011; Skinner et al., 1998; Symonds & Hargreaves, 2016; M. Wang & Eccles, 2012a), lower perceptions of social satisfaction and support from peers (Jenkins et al., 2018; Seidman et al., 1994; Temkin et al., 2018), and greater instances of deviant and disruptive behavior (Kiefer & Ryan, 2008; M. Wang & Dishion, 2012). Yet, students' perceptions about their peers via social support, friendships, or status are important precursors that have potential to temper or exacerbate negative declines in adjustment (De Laet et al., 2015; Jenkins et al., 2018; Kiefer & Ryan, 2008; Kiefer & Wang, 2016; M. Wang & Eccles, 2012b).

According to social-cognitive theory, self-perceptions will be linked with adjustment because they are key for guiding one's own future beliefs and behaviors (Bandura, 1986). For example, perceptions of one's social world are influential for shaping one's future social interactions and engagement with their environment (Patrick et al., 2002). During early

adolescence, perceptions of one's social world are particularly salient because achieving social status, being accepted by one's peers, and avoiding rejection are top social priorities and represent significant motivational "pulls" for future behaviors (Juvonen & Ho, 2008; LaFontana & Cillessen, 2010). These social priorities, in addition to further developed metacognitive skills and greater neurological sensitivity around peers (Keating, 1990; L. Steinberg, 2014), purport that social success is a critical objective during adolescence. The behavioral pathways that students believe will bring social success can shape their goals and choices as they too try to attain success and avoid social rejection from their peers (Kiefer & Ryan, 2008; Ryan & Shim, 2008). For instance, using the same measure of social success as the current investigation, in a study of ninth graders, Jarvinen and Nicholls (1996), found that students' endorsement of sincerity as a characteristic of social success was positively associated with their social satisfaction (i.e., their evaluation of their school social life). This means that when students believed that being sincere was a pathway to social success (i.e., having lots of friends and getting along well with others), they likely felt compelled to put forth effort in making positive and honest connections with others, thereby increasing their sense of social satisfaction, in order to achieve success for themselves. Additional research has found that adolescents have increased their own academic engagement (Zhang et al., 2019) and aggressive behavior (Cohen & Prinstein, 2006; Juvonen & Ho, 2008) if they perceived that their socially successful peers displayed these behaviors.

Students' perceptions about their socially successful peers can also have cross-domain implications for adjustment as much theory and research indicate that social and academic adjustment are greatly intertwined (Patrick et al., 2002; Ryan & Shin, 2018; Shim & Finch, 2014; Wentzel, 2017). For instance, students' classroom engagement has been found to be

enhanced when they seek close relationships via social goals (Dawes, 2017; Kiefer & Ryan, 2008) and feel a sense of relatedness with their peers and teachers (Furrer & Skinner, 2003; Kilday & Ryan, 2019), but class engagement diminishes when students face rejection (Buhs et al., 2006). It is thought that feelings of connectedness, having close relationships, and opportunities to collaborate with peers in class can increase students' ability to participate and engage in class (Buhs et al., 2006; Furrer & Skinner, 2003). Alternatively, when youth pursue greater academic engagement, their peers may also be more inclined to ask them for help and these interactions can serve as a starting point for forming classroom friendships (Laninga-Wijnen et al., 2019; Ryan et al., 1997; Shim & Finch, 2014). As such, academic pursuits can elicit a more positive evaluation of one's social life as well as increasing social satisfaction. The interrelated nature of academic and social adjustment can also have negative implications. When students strive to achieve dominance over their peers, they show subsequent increases in disruptive behavior, and decreases in compliant behaviors like academic engagement and prosocial behavior (Kiefer & Ryan, 2008).

Although research indicates significant developmental changes in the beliefs of the causes of social success (Kiefer & Ryan, 2011) as well as changes in adjustment during adolescence (Engels et al., 2019; M. Wang & Eccles, 2012b; M. Wang & Dishion, 2012), less is known about the *interaction* between the trajectories of social success beliefs and adjustment. Most related prior work has focused on how adjustment trajectories are moderated by aspects of social success (Anderman, 1999; De Laet et al., 2015; Engels et al., 2020) or how trajectories of individual social success (i.e. peer acceptance or popularity) or social goals predict an outcome at a single time point (Dawes, 2017; Engels et al., 2017; Kiefer & Ryan, 2008; Kiefer & Wang, 2016; Ojanen & Findley-Van Nostrand, 2014; Ryan & Shim, 2008). The present study examines

how the developmental trajectories of social success beliefs and adjustment unfold in parallel using parallel process growth curve models. By examining the trajectories, (as opposed to correlations or cross-lagged panel models), we can gain valuable insight into the transactions between these developmental processes as well as account for individual differences in how *changes* in social success beliefs are associated with *changes* in adjustment.

**Role of School Context in Social Perceptions and Adjustment**

We empirically examined how school context plays a role in students' beliefs of social status and their subsequent adjustment. The stage-environment-fit framework posits that maladjustment can arise when there is a mismatch between the affordances of a school environment and the students' developmental needs (Eccles et al., 1993). In early adolescence, when youth desire consistent, intimate relationships, they are often thrust into a middle school environment with many new peers, the need to reestablish social hierarchies, and less contact with the same group of peers as they begin to transition between subject-specific courses. With regard to academics, adolescents desire greater autonomy and challenge, yet middle school coursework has been characterized by less cognitively demanding work, fewer opportunities for student input, and harsher grading policies (Eccles et al., 1991; Juvonen, 2007; Midgley & Feldlaufer, 1987). As such, the transition to middle school from elementary school has been associated with losses in engagement, school achievement, and self-concept (Blyth et al., 1983; Coelho et al., 2020; Ryan et al., 2013; Seidman et al., 1994; Wigfield et al., 1991).

Importantly, we examined another group of early adolescents who did not make a transition between elementary and middle school and remained in the same school from Kindergarten-eighth grade. Some work suggests that the K8 school environment is better equipped to serve adolescents' social needs because they typically have lower student

enrollment, a close-knit community of familiar students and families, strong teacher-student relationships, and overall greater level of school intimacy (E. M. Anderman, 2002; Offenberg, 2001). To this end, when compared to middle school or junior high students, K8 students have been found to have greater self-esteem (Simmons et al., 1979; Weiss & Kipnes, 2006), greater social belonging (E. M. Anderman, 2002), and K8 teachers and administrators generally report a more positive school social context than teachers and administrators in middle schools (Kim et al., 2014). Unlike middle school students who may be inclined to use hostile means in response to a new school organization and social hierarchy (Juvonen & Galván, 2008), K8 students mostly go through their schooling with the same core group of students (A. E. Schwartz et al., 2011). Considering these contextual differences, we expected that K8 students may not experience the negative shift in their beliefs about social success to the degree of transition students.

**Individual Differences in Transition Experiences and Adjustment**

In addition to examining potential differences between students with diverse schooling experiences, we also considered how students' gender and race might contribute to the development of and associations between beliefs of social success and engagement. In general, much of the existing research has yielded inconsistent findings as to whether group differences exist and the nature of such group differences; however, these factors are important to consider because gender and ethnic-racial identity are particularly salient during adolescence (Rivas-Drake et al., 2014; Rose & Rudolph, 2006). For instance, regarding beliefs of social success and social status, girls have been found more likely to endorse sincerity whereas boys are more likely to endorse dominance as a characteristic of social success (Jarvinen & Nicholls, 1996; Kiefer & Ryan, 2011). Yet, other studies have not found these differences between girls and boys (Cillessen & Mayeux, 2004; Vaillancourt & Hymel, 2006). Further, some studies have found that

beliefs of social success vary by ethnicity and race (Dawes & Xie, 2017; Taylor & Graham, 2007), whereas other studies find no differences between students from different ethnic-racial backgrounds (Kiefer & Ryan, 2011; Rodkin et al., 2013).

Perhaps most important for the present study is the potential for one's gender and race to contribute to changes over time and to associations between the peer context and engagement. For example, Li et al. (2011), found that although girls reported greater behavioral and emotional engagement than boys, there were no gender differences in the effect of peer support and bullying on the trajectories of engagement. This suggests that although there may be gender main effects, the associations between social success beliefs and engagement may be similar for boys and girls. Students' racial background may play a role in the longitudinal patterns of social success and engagement as a function of their schools' racial diversity. Ethnic-racial group representation is especially relevant to the present study given our focus on the role of school context and the transition to middle school. If students transition into a middle school with less same-ethnicity peers, they are more likely to be at risk for maladjustment (Graham, 2018; Morales-Chicas & Graham, 2017). If there is not a perceived change in representation or if there is not a clear majority group (as is the case in the present study), race may be less likely to contribute to students' social and school adjustment (Kogachi & Graham, 2020).

**Overview of the Present Study & Study Hypotheses**

Three aims comprised the present study. First, we sought to assess the developmental trajectories of students' beliefs about the characteristics of social success (*sincerity, academic responsibility, dominance*). Longitudinal studies of this nature in early adolescence are rare; thus, this study provides unique insight of how students' beliefs about their peers evolve across early adolescence – specifically across three waves when youth were in sixth, seventh, and eighth

grades. In line with findings from Kiefer and Ryan (2011), the maturity gap framework (Moffitt, 1993, 2006) and social skills models (Wright et al., 1986), we expected students' endorsement of academic responsibility, their endorsement of sincerity (though to a lesser extent) to decline over time, and their endorsement of dominance to increase over time.

The second aim of the present study was to examine relations between changes in students' beliefs about the characteristics associated with social success and their adjustment. To this end, we conducted parallel process growth models to assess how students' endorsement of each of the three characteristics of social success were related to students' trajectories of school engagement (behavioral and emotional). We expected significant and positive domain-specific relations to occur between endorsement of responsibility and engagement as well as positive cross-domain relations to occur between endorsement of sincerity and engagement (Patrick et al., 2002). We expected few or negative relations between changes in endorsement of dominance and changes in engagement.

Our third aim was to investigate the relative ranking of students' endorsement of the characteristics of social success at each wave. Although we anticipated maladaptive changes in the trajectories of students' beliefs (i.e., that sincerity and responsibility would decrease and dominance would increase), we did not expect that endorsement of dominance would be greater than endorsement of sincerity and responsibility at any time point (Kiefer & Ryan, 2011).

A main contribution of the present work is to expand current understanding about the role of school context and individual differences in shaping young adolescents' beliefs about social success within each of the study aims. Of the existing longitudinal studies, most work has included only students who made a transition from elementary to middle school (Bowker et al., 2010; Cillessen & Borch, 2006; Stotsky & Bowker, 2018). The present sample included a

comparison group of adolescents who did not experience this transition, but rather stayed in the same school from kindergarten-eighth grade (K8). Thus, all analyses included a focus on examining differences between transition and K8 students with a multigroup approach; we expected that K8 students would experience less drastic declines in beliefs of social success and adjustment given the absence of a disruption (i.e., school transition) during their schooling. Within each school context, we also considered how students' gender and race may contribute to differences in students' beliefs of social success and their relations with adjustment. However, given the complex and mixed nature of findings in prior work, we did not have any specific hypotheses regarding students' gender and race.

## Methods

### Participant Sample

Data were collected as part of the Student Transitions and Early Adolescent Development (STEAD) project. Approximately 680 students participated in at least one wave of data collection. These school districts had high student mobility rates, so new participants were recruited to join the study at each wave. Two thirds of students attended an elementary school in sixth grade (referred as ESMS group, $N = 6$ schools) and transitioned to one of two middle schools for seventh grade. The other third of students attended the same school from kindergarten to eighth grade (referred as K8 group, $N = 5$ schools). The sample was split evenly by gender (52% girls, 48% boys), was economically diverse (75% of students qualified for reduced price or free lunch), and the Ethnic/Racial demographics were 48% Black, 42% White, 5% Hispanic/Latinx, 5% other. These percentages were similar across all schools and waves. Since 90% of the sample included White and Black students and there was insufficient statistical

power to examine other ethnic groups, the analyses focused only on a subsample of Black (*N* = 321) and White students (*N* = 285).

At year 1 in sixth grade, 331 students participated with 78% continuing to wave 2. At wave 2 when some students transitioned to middle school, 225 new students joined the sample bringing the wave 2 total to 482. Of these students, 80% participated again at wave 3, and 67 students joined the sample at this time bringing the wave 3 total to 454 students. The percentage of students who participated at multiple waves is comparable to other studies that include school districts with a high percentage of mobile families (e.g., Rastogi & Juvonen, 2019). To retain as much of our sample as possible and accommodate for missing data, we employed full information maximum likelihood (FIML) for our analyses which allows for the inclusion of all students who participated in at least one wave.

**Procedure**

Students completed annual surveys in the middle of the school year (~January) in sixth, seventh, and eighth grades. Letters from the research team that described the premise of the project were given to all students to take home to their parents or guardians. This study used an opt-out procedure; if families did not want their child to participate, they were instructed to have their child return a form to the teacher, call the school, or use the phone number provided on the documents to call the primary researchers. The decision to use an opt-out procedure honored the preferences of the superintendent, principles, and teachers at the participating school districts and was approved by the IRB [institution redacted for review]. Teachers were asked to check in with students a few times to ensure that the letters were delivered home. Less than 10% of families decided to opt out of the survey at any wave (participation rates were 93%, 92%, and 95% for waves 1-3, respectively).

During survey administration, students were informed that the purpose of the survey was to learn about their experiences at school, that their participation was voluntary, they could choose to stop at any point if they wanted to, and that their answers would be kept confidential. If students wanted to participate, they needed to sign an assent sheet. The research team read all instructions and items aloud while students read along and responded to the questions. Students were provided with a blank sheet of paper to cover their answers to keep them private. At the conclusion of survey administration, students were given the opportunity to choose two small gifts from a basket filled with a variety of school supplies and prizes. Altogether, survey administration took approximately 30-35 minutes.

## Measures

### *Beliefs of the Causes of Social Success*

Students responded to twelve items that assessed their beliefs of causes of social success on a 5-point scale (1 = strongly disagree, 5 = strongly agree). Items were developed by Jarvinen and Nicholls (1996) and validated with adolescents by Kiefer and Ryan, (2011). All questions followed the stem, "The students who have lots of friends and get along well with others are the ones who…" Four items pertained to *academic responsibility* (i.e., "work hard at school"). Four items pertained to endorsement of *sincerity* (i.e., "take time to listen to others' ideas") and four items pertained to endorsement of *dominance* (i.e., "like to push people around"). The calculation of Cronbach's alphas indicated acceptable internal consistency for endorsement of sincerity ($M_\alpha$ = .71), responsibility ($M_\alpha$ = .83), and dominance ($M_\alpha$ = .72).

### *Student Engagement*

Students responded to established measures of engagement (Skinner et al., 2009) using 5-point scales (1 = not at all true, 5 = very true). Students responded to five items regarding their

*behavioral engagement* (i.e., "I pay attention in my class") and five items about their *emotional engagement* (i.e., "I enjoy learning new things in my class"). The calculation of Cronbach's alphas indicated acceptable internal consistency for behavioral engagement ($M_\alpha$ = .85) and emotional engagement ($M_\alpha$ = .81).

**Analytic Plan**

First, correlations were computed between all study variables, separately for ESMS and K8 students. Fisher's r-to-z tests were used to assess whether the associations are significantly different between groups. Next, means of all study variables were measured at each wave (sixth, seventh, and eighth grade) and compared between school types with t-tests.

We then turned to structural equation modeling using MPlus to conduct growth curve analyses. *Figure 3.1* displays the conceptual framework of the parallel process growth models. We began with linear growth curve models of each measure of social success beliefs and engagement. Then, gender and race were added as covariates to the latent intercepts and slopes. To assess differences between ESMS and K8 students in these analyses, we utilized multi-group models. First, a fully unconstrained multigroup model was examined to note the baseline for each model fit. Next, all pathways were constrained to be equal across ESMS and K8 students and a chi-square difference test was conducted. If the constrained model had worse fit than the unconstrained model, each path in the model was constrained one a time, with chi-square difference tests to evaluate whether there was a worse fit to the unconstrained model. Paths that could be constrained to be equal and did not yield a worse fit were retained whereas the paths that yielded a worse fit were allowed to freely vary.

As the final step of these parallel process growth analyses, the intercepts were regressed on their respective slopes (C and D paths) as well as the slope of engagement variables on the

intercept and slope of social success beliefs (E and F paths). Also examined were the covariances among the intercepts and slopes (A and B paths). With three indicators of social status beliefs (*academic responsibility*, *sincerity*, and *dominance*) and two indicators of student engagement (*behavioral engagement*, *emotional engagement*), six parallel process models were conducted. The same multi-group process described previously was used for the parallel growth models.

Standard criteria were used to evaluate fit of the structural models (i.e., nonsignificant chi-square test, RMSEA < .05, CFI > .95, and TLI > .95 for very good) (Kline, 2015). Analyses utilized maximum likelihood with robust standard errors (MLR) to account for slightly skewed distributions of social success beliefs and engagement. Missing data were handled using full information maximum likelihood estimation (FIML), which allows each participant to contribute their available data to the likelihood function. Therefore, any individual with at least one observation can be included in the analyses.

Lastly, we used within-subjects analysis of variance (ANOVA) to assess the relative ranking of the different characteristics associated with social success at each wave. Between-subject effects were added to determine whether there were any significant differences by school type, gender, or race.

## Results

### Correlations and Descriptives

*Table 3.1* displays correlations between all study variables. Patterns were similar for ESMS and K8 students; Fisher's r-to-z comparisons revealed no significant differences. Among the beliefs of social success, moderate positive correlations were observed between endorsement of sincerity and responsibility whereas relations between the former and dominance were null or negative. Among indicators of adjustment, positive relations were observed between behavioral

and emotional engagement. Sincerity and responsibility were positively related to both dimensions of engagement. Endorsement of dominance was either negatively related to or had no relations with behavioral and emotional engagement.

*Table 3.2* provides descriptive information for all study variables separately by school type. Independent samples t-tests were conducted to examine differences between ESMS and K8 students. Few significant differences emerged. Endorsement of academic responsibility was significantly greater among ESMS students at wave 1 in sixth grade, but at wave 3 in eighth grade, this endorsement was greater among K8 students. ESMS students also more strongly endorsed dominance in eighth grade than K8 students. No significant differences emerged for behavioral and emotional engagement.

**Unconditional Growth Curve Models for Beliefs of Social Success and Student Engagement**

First, unconditional LGMs (longitudinal growth model) were estimated separately for adolescents' beliefs of causes of social success and adjustment to examine changes between waves 1 and 3 (i.e., from grades 6 to 8). Each model included an intercept factor (centered at wave 1) and a linear slope (rates of change over time). Initial unconditional LGMs showed acceptable fit for endorsement of sincerity [$\chi^2(1) = .54$, $p = .46$, RMSEA = .01, CFI = 1.00, TLI = 1.02], academic responsibility [$\chi^2(1) = .39$, $p = .53$, RMSEA = .00, CFI = 1.00, TLI = 1.03] and dominance [$\chi^2(1) = 7.42$, $p = .01$, RMSEA = .10, CFI = .92, TLI = .76]. Results revealed that patterns of beliefs became more maladaptive over time; endorsement of sincerity and academic responsibility declined whereas dominance showed no change. There was significant variance observed for the intercept of sincerity [$\sigma = .33$, $p = .016$], academic responsibility [$\sigma = .48$, $p = .002$], and dominance [$\sigma = .38$, $p = .005$], indicating interindividual heterogeneity in initial levels of beliefs of social success. Variance for the slopes of the three beliefs of social success were all

insignificant suggesting that youth showed similar rates of change on average. Though the variability for the slope of responsibility trended toward significance [σ = .14, $p$ = .06].

Unconditional LGMs showed acceptable fit for behavioral engagement [$\chi^2(1) = .44$, $p$ = .51, RMSEA = .00, CFI = 1.00, TLI = 1.02] and emotional engagement [$\chi^2(1) = 6.20$, $p$ = .013, RMSEA = .09, CFI = .97, TLI = .89]. Both behavioral engagement and emotional engagement showed significant declines on average. There was significant variance observed for the intercepts for behavioral engagement [σ = .33, $p$ < .001] and emotional engagement [σ = .37, $p$ < .001] indicating heterogeneity in initial levels of adjustment. Variance for behavioral engagement was significant [σ = .09, $p$ = .04], but variance for the slope of emotional engagement was not significant, indicating heterogeneity in changes of students' behavioral engagement, but students had similar rates of change for emotional engagement.

**Multigroup Growth Models with Gender and Race as Covariates**

Next, multigroup growth models were conducted for each indicator of social success and engagement with gender and race added as covariates on the intercepts and slopes. See *Table 3.3* for results of these models and *Table 3.4* for model fit indices and chi-square difference tests. All final models exhibited fit indices within acceptable standards.

Regarding sincerity, a fully constrained model between ESMS and K8 students did not yield a significantly worse fit than the unconstrained model [$\Delta\chi^2(6) = 7.78$, $p$ = .25], thus estimates were equivalent across groups. Students' endorsement of sincerity declined over time. Demographic differences emerged only on the intercept with boys endorsing sincerity significantly less than girls in sixth grade.

Regarding academic responsibility, multigroup analyses did reveal significant differences between ESMS and K8 students as a fully constrained model yielded a significantly worse model

fit than the unconstrained model [$\Delta\chi^2(6) = 22.92$, $p = .001$]. Further testing revealed significant differences at the intercepts, slope, and effect of race on the slope. Specifically, endorsement of responsibility was stronger among ESMS students than for K8 students at wave 1 in sixth grade, but endorsement of responsibility significantly declined over time for ESMS students, yet there was no change among K8 students. In K8 settings only, there was less of a decline in endorsement of responsibility among White students than there was for Black students. No other gender or race differences emerged for responsibility.

Multigroup analyses also revealed significant differences between ESMS and K8 students in their endorsement of dominance [$\Delta\chi^2(6) = 15.09$, $p = .02$]. Further testing revealed significant differences for the intercept, slope, effect of race on the intercept, and effect of race on the slope. K8 sixth graders reported greater endorsement of dominance than elementary 6$^{th}$ graders. The slope for changes in students' endorsement of dominance did not achieve significance in either ESMS or K8 settings; however, the slope was positive for ESMS students and negative for K8 students. The effects of race on the intercept and slope did not achieve significance in either setting, but these effects had different magnitudes in ESMS and K8 settings. No other race or gender differences emerged for endorsement of dominance. *Figure 3.2* displays the unconditional linear fixed effects from the final models for ESMS and K8 students.

For behavioral and emotional engagement, fully constrained models between ESMS and K8 students did not yield worse fit than unconstrained models, thus all estimates were equivalent between groups [behavioral: $\Delta\chi^2(6) = 7.75$, $p = .26$; emotional: $\Delta\chi^2(6) = 9.14$, $p = .17$]. Students' reports of behavioral and emotional engagement significantly declined over time. Only one gender difference emerged; boys reported significantly less behavioral engagement than girls in sixth grade. No other demographic differences were significant.

**Multigroup Parallel Process Models between Beliefs of Social Success and Engagement**

Finally, each indicator of social success was combined with each indicator of engagement in a parallel process LGM. *Figure 3.1* provides a conceptual diagram of the estimated models with labels on the paths between growth factors. Refer to *Table 3.4* for model fit indices and chi-square difference tests. The parameters of the final multigroup models are presented in *Table 3.5*. All of the final models achieved good model fit.

Overall, few paths achieved statistical significance and null findings were similar among ESMS and K8 students. At the intercepts (A paths), endorsement of sincerity was positively related to behavioral and emotional engagement. For the model between endorsement of responsibility and behavioral engagement, the slope of behavioral engagement was negatively related to the intercept (D path). This means that students who had greater behavioral engagement in sixth grade experienced greater declines over time than students who started with lower behavioral engagement. Surprisingly, none of the other paths or growth parameters were significant.

Regarding differences between ESMS and K8 students, multigroup analyses revealed fully constrained models for sincerity – behavioral engagement and sincerity – emotional engagement did not show worse fit than unconstrained models.

For the model between responsibility and behavioral engagement, the fully constrained model did yield worse fit than the unconstrained model; further testing revealed differences in the association between the slope of behavioral engagement on the intercept of behavioral engagement (D Path). This association was slightly more negative among ESMS students, meaning that students who reported high behavioral engagement at wave 1 in sixth grade showed greater declines in behavioral engagement than their K8 counterparts. For the model between

responsibility and emotional engagement, the fully constrained model yielded slightly worse fit than the unconstrained model. Further testing revealed this was due to differences of the responsibility intercept on the emotional engagement slope (F path). This association was slightly more positive among ESMS students than among K8 students.

The only other model that showed significant differences between ESMS and K8 students was that between dominance and emotional engagement. The association between the intercept of endorsement of dominance was slightly more positively related to the slope of emotional engagement among K8 students than for ESMS students (F path). The fully constrained model between endorsement of dominance and behavioral engagement did not yield worse fit than the unconstrained model, suggesting patterns were similar between ESMS and K8 students.

**Relative Ranking of Students' Beliefs of Characteristics Associated with Social Success**

Separate within-subjects analysis of variance (ANOVAs) were conducted at each wave to determine whether students' endorsed sincerity, academic responsibility, or dominance more than the others. Follow-up analyses were used to assess differences between each of the three characteristics with multiple pairwise comparisons. A Bonferroni correction was used to adjust for multiple comparisons.

At all three grade levels, there were significant differences in students' endorsement of the three characteristics associated with social success, [sixth: $F(2, 316) = 43.47$, $p < .001$; seventh: $F(2, 465) = 56.78$, $p < .001$; eighth: $F(2, 473) = 10.64$, $p < .001$]. Follow-up pairwise comparisons in sixth grade revealed sincerity to be the most strongly endorsed characteristic of social success ($M = 3.31$, $SE = .06$), followed by endorsement of responsibility ($M = 3.02$, $SE = .06$) then dominance ($M = 2.60$, $SE = .06$). All differences between students' endorsement of sincerity, responsibility, and dominance were significant ($p$'s $< .001$). In seventh grade, sincerity

was again the most strongly endorsed trait ($M$ = 3.26, $SE$ = .05), followed by responsibility ($M$ = 2.84, $SE$ = .05), then dominance ($M$ = 2.74, $SE$ = .05). Significant differences were found again between sincerity and dominance ($p < .004$) as well as responsibility ($p < .001$), but responsibility and dominance did not significantly differ. In eighth grade, findings were similar to previous waves; sincerity was the most strongly endorsed trait ($M$ = 3.20, $SE$ = .05) followed by responsibility ($M$ = 2.86, $SE$ = .05), then dominance ($M$ = 2.61, $SE$ = .05). All differences between sincerity, responsibility, and dominance were significant ($p$*'s* < .01).

A significant interaction by school type emerged in eighth grade ($F(2, 440) = 9.08$, $p < .001$). Among ESMS students in eighth grade, their greatest endorsement was sincerity ($M$ = 3.18, $SE$ = .06), followed by dominance ($M$ = 2.77, $SE$ = .05), and the least endorsement for responsibility ($M$ = 2.72, $SE$ = .06). A slightly different order emerged for K8 eighth graders; their most strongly endorsed trait was also sincerity ($M$ = 3.22, $SE$ = .08), but was followed by responsibility ($M$ = 3.00, $SE$ = .08), with the least endorsement for dominance ($M$ = 2.45, $SE$ = .08). None of the other between-subjects effects or interactions were significant meaning that in most cases, rankings of characteristics of social success were similar between ESMS and K8 students, between girls and boys, and between students from different racial backgrounds.

## Discussion

The nature of the behavioral characteristics that define social success during adolescence has been a long-standing concern and the focus of decades of research (e.g., Adler & Adler, 1995; Coie et al., 1982; Kiefer & Ryan, 2011). Being accepted into the peer group and having social success is a significant concern for young adolescents (LaFontana & Cillessen, 2010), so they are likely to be very aware of the behaviors of peers they view to be socially successful (Steinberg, 2014) and interpret their behaviors as a guide for their own beliefs and behaviors

(Juvonen & Ho, 2008). The present study sought to investigate patterns of social success in early adolescence for youth with different schooling experiences – specifically a group of students who made a transition from an elementary to a middle school after sixth grade (ESMS) and another group of students who remained in the same school from kindergarten – eighth grade (K8). Findings indicated that beliefs of social success trended toward dominance and away from academic responsibility and sincerity for most students, though there were some important differences between school contexts. Counter to expectations, students' engagement was not linked with their beliefs of social success.

**Longitudinal Trends of the Beliefs of Social Success Across School Settings**

Multigroup growth curve analyses indicated mostly maladaptive, but nuanced changes for the beliefs of the causes of social success across early adolescence. In both ESMS and K8 settings, students' perceptions that their sincere (honest, trustworthy) peers were socially successful (had lots of friends) tended to decline from sixth through eighth grades. However, ANOVA analyses of the relative ranking of students' endorsement of sincerity, academic responsibility, and dominance indicated that sincerity was consistently the most highly rated trait of social success. This is in line with findings from Kiefer and Ryan (2011) and the social-skills model which purports that prosocial behavior such as sincerity is a universal necessity for achieving social success and acceptance (Wright et al., 1986). Despite a decline in the endorsement of sincerity, students still believed this to be the most defining feature of social success in both school contexts, contributing to a slightly more optimistic view of adolescent development.

Yet, some results were characterized by more maladaptive trends and exhibited change between ESMS and K8 students. For example, though sixth graders in elementary school

reported stronger endorsement of responsibility than K8 sixth graders, ESMS students reported less that their academically oriented peers were socially successful whereas there was not a significant change for K8 students. This is in line with some work that documents academic declines across the middle school transition (Eccles & Midgley, 1989; Wigfield et al., 1991). A lack of change among K8 students' perceptions perhaps reflects their more stable schooling environment without the disruption of a transition. In contrast, when students transition into a middle school, there is often an influx of new peers as multiple elementary schools funnel into one middle school and when social hierarchies need to be re-established, rebellious behavior tends to stand out more than behavior that complies with authority such as following school rules or trying hard in school (Juvonen & Murdock, 1995; Pellegrini & Long, 2002). The decline in students' endorsement of academic responsibility across the transition also supports our hypotheses concerning the maturity gap (Moffitt, 2006).

Further, students' endorsement of dominance was also sensitive to school context. Though K8 students endorsed dominance in sixth grade less than elementary students, trends over time were positive among ESMS students and negative among K8 students (though neither slope achieved significance). That there was not a significant increase in students' endorsement of dominance as they made their transition to middle school as might be expected from a maturity gap framework is encouraging. However, even more encouraging is that students' endorsement of dominance in K8 settings showed declining trends into eighth grade. Perhaps because K8 students do not experience a transition and mostly go through their schooling with the same core group of peers (Schwartz et al., 2011), they do not need to use dominance to gain social success because they know each other well. Also, it is possible that dominance in an

intimate K8 setting stands out in a negative way and is interpreted as reactive aggression, which is typically not viewed favorably in adolescence (Stoltz et al., 2016).

**Null Relations Between Social Success Beliefs and Engagement**

Several prior studies document declines in students' reports of behavioral and emotional engagement during early adolescence. However, much of this work was conducted among students who made a transition from elementary to middle school and researchers suggest this may reflect a mismatch between adolescents' needs and the affordances of the academic environments in middle schools (Eccles et al., 1993). In the present study, we found that both ESMS and K8 students reported declines in behavioral and emotional engagement. Although some work has found that the K8 environment may prevent declines in engagement (Juvonen et al., 2004), the findings of the present study suggest that declines in engagement may reflect a developmental change rather than the result of a school transition. Indeed, early adolescence represents the culmination of several significant changes such as the onset of puberty and greater desire for independence which may contribute to overall less positive feelings at school and lower reports of engagement (Eccles & Midgley, 1989; Simmons & Blyth, 1987).

Contrary to our expectations, for the most part, students' beliefs of social success were not significantly associated with changes in their reports of engagement. We expected that increases in endorsement of academic responsibility and sincerity would predict increases in engagement given the intertwined nature of academic and social development (Ryan & Shin, 2018). Although there were significant and positive correlations between engagement and endorsement of sincerity and academic responsibility at each wave, and some significant relations at the intercepts in sixth grade, there were no significant relations in the trends over time. Null relations were found in both school contexts. In part, these findings may reflect that

engagement declined for nearly everyone as there was little variance found for behavioral engagement and no significant variance for emotional engagement, so changes in beliefs of social success were unlikely to predict changes in engagement.

Additional explanations may stem from the complex relationship between social status and engagement. Although much research indicates that students who are well-liked (e.g., high in peer acceptance) often report greater engagement in school than students who are not as well-liked (see Wentzel et al., 2020 for a review) and that youth's perceptions of their friends' engagement influences their own engagement (Kindermann, 2007; Shin & Ryan, 2014), the effect on youth's engagement based on their perceptions of socially successful peers has received less attention. One recent study conducted by Zhang et al. (2019) found that engagement of seventh graders in both the U.S. and China was influenced by the engagement of peers they perceived to be popular and well-liked, but not by peers who were admired (who they respect and want to be like). Perhaps our measure of social success was interpreted similarly to admiration, and admired peers may not wield the degree of influential power as popular peers (Zhang et al., 2019). Or, given the importance of social goals (Ryan & Shim, 2008), it may be that students have varying desire to be like their socially successful peers and this desire calibrates the extent to which their behavior is influenced by high status peers, resulting in a null effect on average in the present study.

**Few Demographic Group Differences in Beliefs of Social Success and Engagement**

Overall, there were few significant differences between boys and girls and between students with different racial backgrounds. Two significant differences emerged with respect to gender. The first was that girls endorsed sincerity significantly more as a characteristic of social success than boys did in sixth grade, but there were no differences in how their endorsement of

sincerity changed over time (slightly declines observed for boys and girls). Girls tend to greatly value intimacy and trust in their friendships (Rose & Rudolph, 2006), whereas this is not as strong of a defining feature for adolescent boys' friendships, so it is not surprising that being sincere and honest would be perceived as a defining feature of social success for girls. Second, in line with prior research, boys reported less behavioral engagement in sixth grade than girls (e.g., Li et al., 2011; M. Wang & Eccles, 2012a). This may in part reflect differences in how boys and girls are socialized to engage in school; girls tend to feel more inclined to please adults and teachers and worry more when they feel they do not meet these expectations whereas these drives are not as strong among adolescent boys (Pomerantz et al., 2002). Different role expectations and stereotypes can also contribute to girls having different values and appraisals of school-related tasks than boys such as the extent to which academic performance contributes to one's self-concept (Eccles, 2009). Taken together, this may have contributed to girls feeling more compelled to listen and pay attention in class. Yet, interestingly, there were no gender differences found for reports of emotional engagement or endorsement of responsibility or dominance in the present study and all findings were consistent between ESMS and K8 settings, underscoring that some patterns of change are normative during early adolescence.

Further, for the most part, few differences were found from students from different racial backgrounds. This is somewhat surprising given that Black students have been found to report more negative perceptions of school climate and social support at school compared to their White and Latinx peers, often a result of unfair and biased disciplinary and grading practices as well as increased instances of discrimination (Benner et al., 2018; Konold et al., 2017). In the present study, findings suggested that within the K8 setting only, Black students reported greater declines in their endorsement of responsibility as a characteristic of social success over time and

there was a trend indicating Black youth endorsed dominance slightly more in sixth grade than their peers. It is interesting that these trends were only present in K8 settings; it may be that remaining with the same group of peers can be challenging for students of color if they are experiencing discrimination and a less supportive environment than transition students who get to "start over" among new peers (Farmer et al., 2011).

However, students were more similar to one another than they were different, perhaps because of the "balanced" nature of school ethnic-racial diversity in the present study. According to Kogachi and Graham, (2020), when there is no clear numerical majority group (i.e., most students were Black and White), group differences may not be as pronounced if they exist at all. Future research should continue to build on examining the role of school diversity might shape students' experiences (Juvonen et al., 2006; Morales-Chicas & Graham, 2017), especially across schools with different grade structures and among different ethnic groups. Further, the present study was limited by only examining group differences between Black and White students at the mean level, which ignores within-group heterogeneity; more research is needed that considers how identities inform social adjustment from the study design and measurement phase (Matthews & López, 2020).

**Study Strengths and Limitations**

In the present study, we sought to revisit and gain novel insight about adolescents' views of the behaviors that define social success and connections with engagement. With a sample consisting of youth who made a transition to middle school and youth who remained in the same school from kindergarten-eighth grade, we were able to show that changes in students' beliefs of social success and engagement are not entirely limited to changes experienced around the transition to middle school (Eccles et al., 1993), but rather may reflect some normative changes

in early adolescence. Although much research has included comparisons between ESMS students and K8 students with regard to academic adjustment and global self-esteem (e.g., Rockoff & Lockwood, 2010; Simmons & Blyth, 1987), the present study added new information about students' beliefs of social success. Further, the present study utilized self-report items to measure social status which may provide a more direct assessment of students' beliefs about characteristics that define social status than a correlation between nominations received for status and nominations received for a particular behavior (Kiefer & Ryan, 2011). The findings of the present study, that status becomes more defined by dominance and less defined by academic adjustment in early adolescence, align with studies that utilize peer nominations (e.g., LaFontana & Cillessen, 2002). This is encouraging because peer nomination methodology can be time consuming and it is becoming more difficult to conduct peer nomination research in schools (Mayeux & Kraft, 2017), so self-reports of social success may be a helpful alternative.

The present study has several limitations that we acknowledge. First, although our study was longitudinal, students were only surveyed once per school year. Important changes have been documented in social status and engagement within a school year (Bellmore, 2011; North et al., 2019), so it is possible that some changes went undetected in our study. Second, the present study only considered how changes in social success beliefs predicted changes in students' reports of behavioral and emotional engagement. It may be that other indicators of adjustment, such as academic achievement or self-concept, will be more sensitive to change from social success beliefs. Future research should also consider how students' social goals might moderate the relation between students' social perceptions and adjustment (Kiefer & Wang, 2016; Ojanen & Findley-Van Nostrand, 2014). Third, we were only able to examine group differences by gender and race which ignores issues how identities may intersect (Cole, 2009). Further research

with more diverse samples is needed to understand how both gender and race may interact to inform how students perceive social success.

## Conclusion

As achieving social success is a key concern for young adolescents (LaFontana & Cillessen, 2010), understanding the behaviors that define social success is important for teachers, parents, and practitioners. Also, it is important to investigate the social success beliefs and adjustment of students who attend different types of schools as there is much variety of school grade structures in the U.S. and abroad (e.g., Cappella et al., 2019). Though the present findings suggest declines in engagement and some maladaptive changes in social success beliefs, it should not be understated that students still believed that sincerity was the most defining feature of social success at all grade levels and school settings. Our findings suggest that macro-level features of schools such as the presence or absence of a transition is important in some respects, but that some changes may be developmentally normative and important changes may be driven by changes in classroom instruction and individual differences (Eccles & Roeser, 2011). The nuanced nature of the present findings underscores the multifaceted nature of early adolescent development and that the interaction of academic and social adjustment merits continued attention.

*Table 3.1 Correlations for all Study Variables among ESMS and K8 Students*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. W1 Sincerity | -- | .69** | -.25** | .25** | .28** | .39** | .34** | .02 | .24** | .25** | .19* | .19* | -.06 | .35** | .23* |
| 2. W1 Responsibility | .68** | -- | -.35** | .30** | .37** | .29** | .28** | .01 | .15 | .19* | .22* | .24** | -.16 | .20* | .19* |
| 3. W1 Dominance | -.13 | -.22** | -- | -.09 | -.06 | -.16 | -.18 | .27** | -.01 | .03 | -.21* | -.28** | .30** | -.13 | -.03 |
| 4. W1 B. Eng | .25** | .18* | -.05 | -- | .66** | .14 | .14 | .04 | .56** | .53** | .13 | .09 | -.10 | .50** | .35** |
| 5. W1 E.Eng | .30** | .28** | -.02 | .61** | -- | .21* | .13 | -.05 | .42** | .50** | .11 | .15 | -.09 | .35** | .42** |
| 6. W2 Sincerity | .26** | .16 | .05 | .15 | .24** | -- | .66** | -.25** | .14 | .10 | .26** | .23** | -.26** | .10 | .16 |
| 7. W2 Responsibility | .22** | .27** | -.14 | .18* | .22** | .63** | -- | -.24** | .16* | .22** | .21* | .39** | -.19* | .13 | .16 |
| 8. W2 Dominance | -.17* | -.09 | .30** | .02 | -.10 | -.14* | -.17** | -- | .02 | .02 | -.16 | -.20* | .49** | -.04 | -.13 |
| 9. W2 B.Eng | -.01 | -.06 | -.08 | .30** | .34** | .19** | .26** | -.13* | -- | .70** | -.01 | .08 | .03 | .55** | .39** |
| 10. W2 E.Eng | .05 | .06 | -.10 | .22** | .42** | .22** | .30** | -.11* | .67** | -- | .03 | .10 | .05 | .48** | .50** |
| 11. W3 Sincerity | .43** | .27** | -.09 | .27** | .28** | .34** | .25** | -.18** | .16** | .18** | -- | .64** | -.25** | .12 | .22** |
| 12. W3 Responsibility | .27** | .15 | .02 | .19* | .27** | .28** | .32** | -.14* | .14* | .21** | .64** | -- | -.22** | .16* | .33** |
| 13. W3 Dominance | -.09 | -.15 | .20* | .06 | -.05 | -.17** | -.20** | .35** | -.04 | -.05 | -.12* | -.23** | -- | -.01 | -.02 |
| 14. W3 B. Eng | -.03 | .01 | -.08 | .25** | .31** | .08 | .13* | -.11 | .48** | .35** | .14* | .19** | -.05 | -- | .62** |
| 15. W4 E.Eng | .12 | .14 | .06 | .34** | .46** | .13* | .16* | -.02 | .39** | .48** | .13* | .20** | -.02 | .60** | -- |

Note. Correlations for ESMS students are reported below the diagonal; correlations for K8 students are reported above the diagonal. W1 refers to 6th grade; W2 refers to 7th grade; W3 refers to 8th grade. For adjustment, B. Eng = behavioral engagement, E. Eng = emotional engagement, ** $p < .01$, * $p < .05$

*Table 3.2 Means and Standard Deviations among Study Variables by School Type*

| | ESMS | | K8 | | | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | *p* |
| *Beliefs of Social Success* | | | | | | |
| W1 Sincerity | 3.39 | 1.02 | 3.25 | 0.99 | $t(334) = 1.25$ | $p = .21$ |
| W1 Academic | 3.17 | 1.15 | 2.89 | 1.13 | $t(333) = 2.22$ | $p = .03$ |
| W1 Dominance | 2.58 | 1.1 | 2.65 | 1.16 | $t(335) = -.58$ | $p = .56$ |
| W2 Sincerity | 3.31 | 1.02 | 3.23 | 0.91 | $t(487) = .89$ | $p = .38$ |
| W2 Academic | 2.92 | 1.13 | 2.78 | 0.99 | $t(487) = 1.30$ | $p = .19$ |
| W2 Dominance | 2.84 | 1.04 | 2.66 | 1.01 | $t(483) = 1.77$ | $p = .08$ |
| W3 Sincerity | 3.18 | 0.94 | 3.24 | 1 | $t(456) = -.65$ | $p = .52$ |
| W3 Academic | 2.71 | 0.97 | 2.96 | 1.02 | $t(456) = -2.57$ | $p = .01$ |
| W3 Dominance | 2.78 | 0.9 | 2.45 | 0.94 | $t(455) = 3.61$ | $p < .001$ |
| *Adjustment* | | | | | | |
| W1 Behavioral Engagement | 4.11 | 0.79 | 4.01 | 0.83 | $t(337) = 1.18$ | $p = .24$ |
| W1 Emotional Engagement | 3.75 | 0.84 | 3.6 | 0.89 | $t(338) = 1.62$ | $p = .11$ |
| W2 Behavioral Engagement | 3.87 | 0.86 | 3.98 | 0.76 | $t(490) = -1.38$ | $p = .17$ |
| W2 Emotional Engagement | 3.34 | 0.87 | 3.46 | 0.8 | $t(490) = -1.47$ | $p = .14$ |
| W3 Behavioral Engagement | 3.79 | 0.81 | 3.84 | 0.71 | $t(458) = -.74$ | $p = .46$ |
| W3 Emotional Engagement | 3.27 | 0.73 | 3.28 | 0.73 | $t(457) = -.09$ | $p = .93$ |

*Note*. All variables were measured on a 5-point scale (1 = not at all true, 5 = very true). W1 refers to 6$^{th}$ grade; W2 refers to 7$^{th}$ grade; W3 refers to 8$^{th}$ grade. ESMS refers to students who made a transition from elementary to middle school and K8 refers to students who stayed in the same school from kindergarten – eighth grade.

*Table 3.3 Coefficients for Multigroup Longitudinal Growth Models for Beliefs of Social Success and Adjustment*

| | ESMS | | K8 | |
|---|---|---|---|---|
| *Sincerity* | B | SE | B | SE |
| Intercept | 3.41** | .08 | 3.41** | .08 |
| Gender | -.25** | .10 | -.25** | .10 |
| Race | -.07 | .10 | -.07 | .10 |
| Slope | -.13** | .05 | -.13** | .05 |
| Gender | .09 | .06 | .09 | .06 |
| Race | .04 | .06 | .04 | .06 |
| *Responsibility* | | | | |
| Intercept | **3.28**** | **.10** | **2.92**** | **.11** |
| Gender | -.13 | .11 | -.13 | .11 |
| Race | -.10 | .11 | -.10 | .11 |
| Slope | **-.27**** | **.07** | **-.05** | **.07** |
| Gender | .08 | .07 | .08 | .07 |
| Race | **-.01** | **.08** | **.18*** | **.10** |
| *Dominance* | | | | |
| Intercept | **2.66**** | **.12** | **2.76**** | **.12** |
| Gender | .03 | .11 | .03 | .11 |
| Race | **.03** | **.14** | **-.22** | **.17** |
| Slope | **.07** | **.07** | **-.11** | **.07** |
| Gender | .02 | .07 | .02 | .07 |
| Race | **-.05** | **.09** | **.01** | **.10** |
| | ESMS | | K8 | |
| *Behavioral Engagement* | B | SE | B | SE |
| Intercept | 4.14** | .06 | 4.14** | .06 |
| Gender | -.23** | .08 | -.23** | .08 |
| Race | .03 | .08 | .03 | .08 |
| Slope | -.11** | .04 | -.11** | .04 |
| Gender | .05 | .05 | .05 | .05 |
| Race | -.06 | .05 | -.06 | .05 |
| *Emotional Engagement* | B | SE | B | SE |
| Intercept | 3.72** | .07 | 3.72** | .07 |
| Gender | -.11 | .08 | -.11 | .08 |
| Race | -.06 | .08 | -.06 | .08 |
| Slope | -.24** | .04 | -.24** | .04 |
| Gender | .07 | .05 | .07 | .05 |
| Race | .02 | .05 | .02 | .05 |

*Note.* Unstandardized estimates are reported. Boldface indicates paths that were freed to vary between ESMS and K8 students. Gender was coded (0 = girls, 1 = boys) and Race was coded as (0 = Black, 1 = White). * $p < .05$, ** $p < .01$.

*Table 3.4 Model Fit Indices and Comparisons for Growth Curve and Parallel Process Models*

| Parameter | $X^2$ | *df* | *p* | RMSEA | CFI | TLI | Δ*X2* | Δ*df* | *p* |
|---|---|---|---|---|---|---|---|---|---|
| Sincerity | | | | | | | | | |
| Unconstrained | 4.15 | 8 | .84 | 0 | 1 | 1 | | | |
| Fully constrained | 11.75 | 14 | .63 | 0 | 1 | 1 | 7.78 | 6 | .25 |
| Responsibility | | | | | | | | | |
| Unconstrained | 5.38 | 6 | .50 | 0 | 1 | 1 | | | |
| Fully constrained | 28.61 | 12 | .004 | .07 | .73 | 0.6 | 22.92 | 6 | .001 |
| Final | 7.42 | 9 | .59 | 0 | 1 | 1 | 2.04 | 3 | .56 |
| Dominance | | | | | | | | | |
| Unconstrained | 12.5 | 6 | .05 | .06 | .93 | .77 | | | |
| Fully constrained | 27.62 | 12 | .006 | .07 | .82 | .73 | 15.09 | 6 | .02 |
| Final | 12.78 | 8 | .12 | .045 | .95 | .88 | .31 | 2 | .86 |
| Behavioral Engagement | | | | | | | | | |
| Unconstrained | 13.81 | 6 | .03 | .07 | .96 | .87 | | | |
| Fully constrained | 21.28 | 12 | .05 | .05 | .95 | .92 | 7.75 | 6 | .26 |
| Emotional Engagement | | | | | | | | | |
| Unconstrained | 17.94 | 6 | .006 | .08 | .93 | .80 | | | |
| Fully constrained | 27.09 | 12 | .007 | .06 | .91 | .87 | 9.14 | 6 | .17 |
| Sincerity - BENG | | | | | | | | | |
| Unconstrained | 25.52 | 20 | .18 | .03 | .98 | .95 | | | |
| Fully constrained | 50.83 | 37 | .06 | .03 | .95 | .93 | 25.19 | 17 | .09 |
| Sincerity - EENG | | | | | | | | | |
| Unconstrained | 23.55 | 19 | .21 | .03 | .98 | .96 | | | |
| Fully constrained | 45.61 | 36 | .13 | .03 | .97 | .95 | 22.11 | 17 | .18 |
| Responsibility - BENG | | | | | | | | | |
| Unconstrained | 21.00 | 16 | .18 | .03 | .98 | .94 | | | |
| Fully constrained | 54.29 | 34 | .02 | .04 | .93 | .89 | 33.21 | 18 | .016 |
| Final | 31.81 | 30 | .38 | .01 | .99 | .99 | 10.86 | 14 | .70 |
| Responsibility - EENG | | | | | | | | | |
| Unconstrained | 23.42 | 16 | .10 | .04 | .98 | .92 | | | |
| Fully constrained | 56.94 | 34 | .01 | .05 | .92 | .88 | 33.64 | 18 | .014 |
| Final | 36.68 | 30 | .19 | .03 | .98 | .96 | 13.12 | 14 | .52 |
| Dominance - BENG | | | | | | | | | |
| Unconstrained | 31.36 | 18 | .03 | .05 | .95 | .85 | | | |
| Fully constrained | 54.59 | 35 | .02 | .04 | .93 | .89 | 23.33 | 17 | .14 |
| Dominance - EENG | | | | | | | | | |
| Unconstrained | 34.41 | 20 | .02 | .05 | .94 | .85 | | | |
| Fully constrained | 63.58 | 37 | .004 | .05 | .90 | .85 | 29.17 | 17 | .03 |
| Final | 47.74 | 33 | .04 | .04 | .94 | .91 | 13.28 | 13 | .43 |

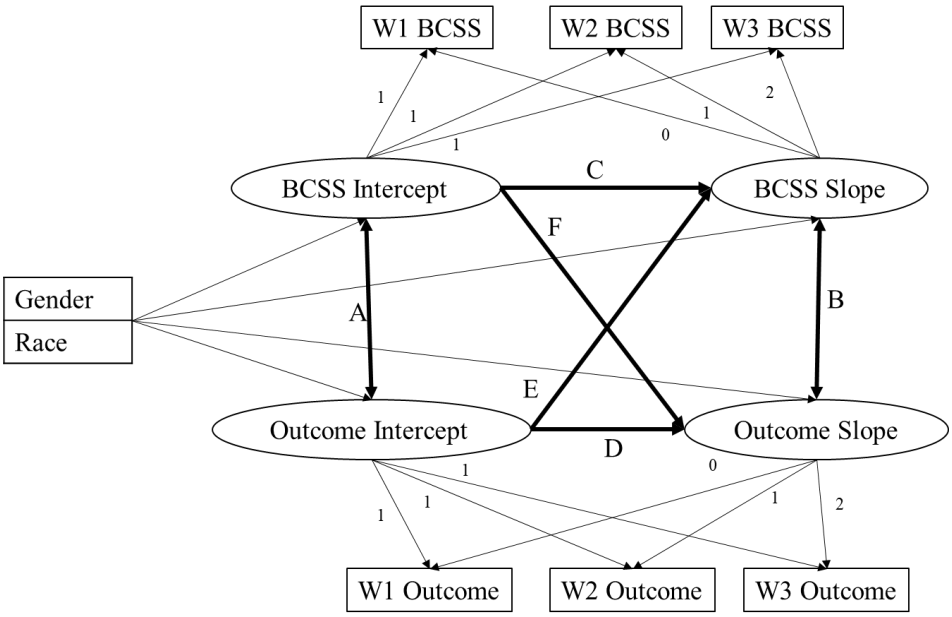
*Note.* If models that were fully constrained to be equal for ESMS and K8 students yielded significantly worse fit, further testing was conducted to determine which paths differed between groups.

*Table 3.5 Parameters for Multigroup Parallel Process Growth Models*

| | Sincerity | | | | Responsibility | | | | Dominance | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ESMS | | K8 | | ESMS | | K8 | | ESMS | | K8 | |
| | B | SE | B | SE | B | SE | B | SE | B | SE | B | SE |
| Behavioral Engagement | | | | | | | | | | | | |
| Path A | .11* | .06 | .11* | .06 | .08 | .08 | .08 | .08 | .06 | .06 | .06 | .06 |
| Path B | 0 | 0 | 0 | 0 | .01 | .03 | .01 | .03 | -.03 | .02 | -.03 | .02 |
| Path C | .06 | .21 | .06 | .21 | -.19 | .21 | -.19 | .21 | -.19 | .14 | -.19 | .14 |
| Path D | -.05 | .09 | -.05 | .09 | **-.20*** | **.09** | **-.18*** | **.09** | -.08 | .07 | -.08 | .07 |
| Path E | -.06 | .18 | -.06 | .18 | .08 | .12 | .08 | .12 | .01 | .08 | .01 | .08 |
| Path F | -.05 | .11 | -.05 | .11 | .03 | .10 | .03 | .10 | -.15 | .09 | -.15 | .09 |
| Emotional Engagement | | | | | | | | | | | | |
| Path A | .18** | .06 | .18** | .06 | .14 | .07 | .14 | .07 | -.06 | .06 | -.06 | .06 |
| Path B | 0 | 0 | 0 | 0 | -.01 | .03 | -.01 | .03 | 0 | 0 | 0 | 0 |
| Path C | .02 | .15 | .02 | .15 | -.24 | .16 | -.24 | .16 | -.15 | .17 | -.15 | .17 |
| Path D | .09 | .15 | .09 | .15 | -.15 | .11 | -.15 | .11 | -.01 | .07 | -.01 | .07 |
| Path E | -.04 | .13 | -.04 | .13 | .18 | .12 | .18 | .12 | .01 | .08 | .01 | .08 |
| Path F | -.16 | .16 | -.16 | .16 | **.04** | **.09** | **.05** | **.10** | **.08** | **.09** | **.09** | **.09** |

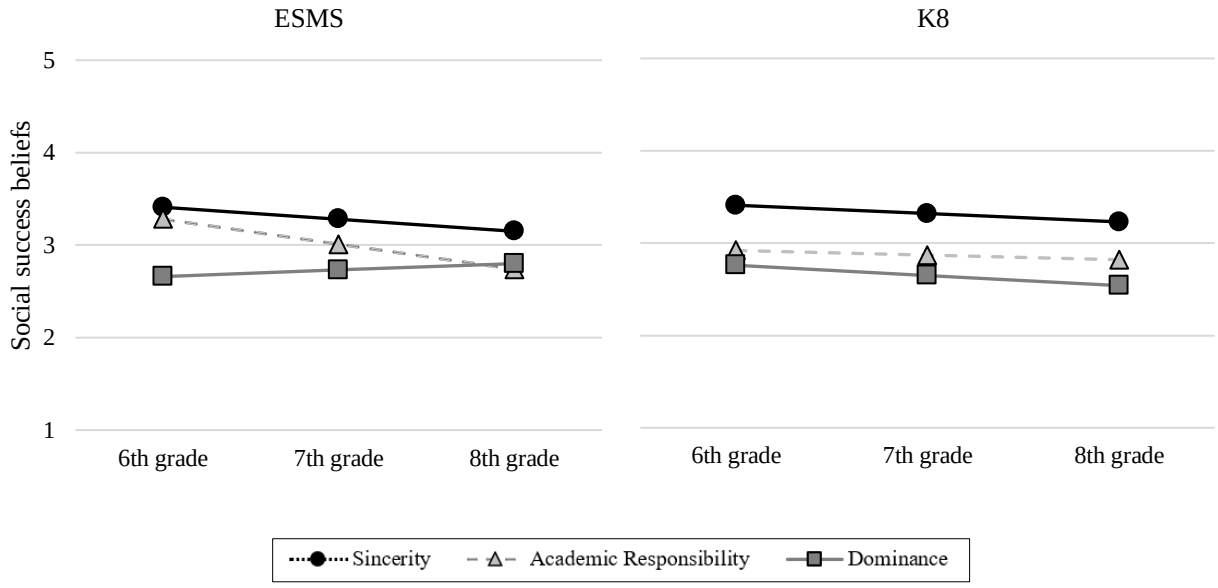
*Note.* Unstandardized estimates are reported. Boldface indicates paths that were allowed to freely vary between ESMS and K8 students. Slope variances for emotional engagement were constrained to 0 to prevent negative residual variance. * $p < .05$, ** $p < .01$

*Figure 3.1 Conceptual Model for Parallel Process Growth Curve Analyses*




*Note.* BCSS = Belief of the causes of Social Status; Single headed arrows denote regression paths; double headed arrows denote covariances. Path A = Covariance between BCSS and outcome intercepts; Path B = Covariance between BCSS and Outcome slopes; Path C = BCSS slope regressed on BCSS intercept; Path D = outcome slope regressed on outcome intercept; Path E = BCSS slope regressed on outcome intercept; Path F = outcome slope regressed on BCSS intercept. Gender was coded as (0 = girls, 1 = boys); Race was coded as (0 = White, Hispanic/Latinx, Other, 1 = Black).

*Figure 3.2 Linear Fixed Effects of Changes in the Beliefs of the Characteristics Associated with Social Success*




*Note.* Estimates for intercepts and slopes from the final models are displayed. ESMS refers to elementary-middle school students and K8 refers to students who attended the same school from kindergarten-eighth grade.

## Chapter 4 Adjustment at School and the Middle School Transition: Exploring the Top Dog-Bottom Dog Phenomenon during Early Adolescence

The transition from elementary to middle school is widely characterized as a challenging time for young adolescents (Eccles et al., 1993; Juvonen et al., 2004; Symonds & Hargreaves, 2016). Students' lives at school are disrupted at the same time they are undergoing a multitude of physical, emotional, psychological, and social changes (Eccles & Midgley, 1990; Simmons & Blyth, 1987). For a sizable number of individuals, these developmental changes are associated with declines in well-being and functioning at school (Akos et al., 2015; Eccles et al., 1984; Ryan et al., 2013) and have implications for long-term challenges lasting into early adulthood (Simons et al., 2017; Véronneau et al., 2008).

One possible explanation for these declines around the transition to a new school is the top dog-bottom dog (TDBD) phenomenon (A. E. Schwartz et al., 2016; Simmons & Blyth, 1987). When students make a transition from elementary to middle school, they are also making a transition in their social position, leaving behind their seniority as "top dogs" (i.e., the oldest students at their school) to "bottom dogs" (i.e., the youngest students at their school). It has been theorized that bottom dogs may have less positive experiences at school than top dogs because of their newness to a larger school, lack of close relationships with peers and school personnel, few opportunities to lead or have authority among their peers, and potentially increased feelings of worry and intimidation from older students (A. E. Schwartz et al., 2016). In contrast, top dog students are more likely to be familiar with the formal and informal routines and norms of their

school, feel more connected with people at school, and may be granted more autonomy and opportunities for leadership. However, extant research has not examined these explanations.

To address this gap, the present study investigates the top dog-bottom dog phenomenon and its associated mechanisms in a large sample of young adolescent students in fifth or sixth grade who attended schools with a variety of timings for the transition to middle school (thus representing bottom, middle, and top dogs in their school contexts). By focusing on students who are the same developmental age, but hold different positions in their school, we can examine differences in adjustment as they relate to the TDBD. The present study builds on prior work that provides support for the TDBD regarding general adjustment at school by examining whether the TDBD also applies to classroom engagement and peer dynamics (i.e., social status). Notably, this study is the first to investigate potential mechanisms for the TDBD; specifically, we assess whether students' perceptions of leadership and/or their perceptions of anonymity could explain differences in students' adjustment predicted by their position as a bottom, middle, or top dog.

**Transition from Elementary to Middle School**

In early adolescence, the contribution of the TDBD and grade span to students' adjustment must be understood against the larger backdrop of changes brought upon by the transition from elementary to middle school. For many students, the transition from a small elementary school to large middle school is associated with declines in students' academic and socioemotional adjustment at school (Coelho et al., 2020; Eccles et al., 1984; Ryan et al., 2013; Seidman et al., 1994; Wigfield et al., 1991). Much research has examined students' experiences across the transition through the lens of stage-environment-fit perspective which posits that declines in their adjustment are the result of a mismatch of students' developmental needs and the affordances of their school environment (Eccles et al., 1993). For instance, at a time when peers are particularly

influential and relationships are especially important, youth are thrust into a middle school environment where they may have less contact with their friends from elementary school and need to form new relationships among a larger pool of peers (Pellegrini, 2002). Close relationships with teachers are more challenging as students begin to have different teachers for their subject courses throughout the school day (Midgley et al., 1989). Adolescents also desire autonomy and challenge in their coursework, but have been found to receive less opportunity for input in their middle school courses and less cognitively demanding schoolwork (Eccles et al., 1991). Taken together, declines across the transition to middle school, according to stage-environment-fit perspective, can be attributed to adolescents' moving into a new school environment that is ill-fitted with their developmental needs.

**Top Dog Bottom Dog Hypothesis and the Middle School Transition**

The TDBD hypothesis identifies the timing of early adolescents' transition to middle school as a structural factor that contributes to their adjustment across the transition to middle school. The TDBD hypothesis was first examined by Simmons, Blyth and colleagues in the late 1970's and early 80's. The first of several empirical studies, Blyth et al. (1978), found that a sixth graders who attended a school with a grade span of kindergarten-eighth grade (K8) reported greater victimization than sixth graders who attended an elementary school with kindergarten-sixth grade span (K6). However, this pattern reversed when K6 sixth graders transitioned from their position as top dogs in elementary school to bottom dogs as seventh graders in junior high; by this time, junior high seventh graders reported greater victimization and increased feelings of anonymity among their peers than K8 seventh graders. Subsequent studies have found that junior high seventh graders reported greater instances of victimization (in the form of threats, thefts, and violence; Blyth et al., 1980), lower self-esteem especially among girls (Simmons et al.,

1979), had lower GPAs (Blyth et al., 1983), and participated less in school extracurricular activities than K8 seventh graders (Simmons et al., 1987). Taken together, conclusions drawn from these studies posited that bottom dog students (both in junior high and in K8 contexts) experience a less positive school environment due to the potentially negative influences from deviant older peers and an underdeveloped sense of connection and belonging at school (Simmons & Blyth, 1987).

Additional research has corroborated adjustment patterns in line with the TDBD in the realms of achievement and adjustment at school. Specifically, compared to their same age peers who are not at the top of their school's grade span, top dog students had higher standardized achievement (Alspaugh, 1998; Byrnes & Ruby, 2007; Offenberg, 2001; Rockoff & Lockwood, 2010; A. E. Schwartz et al., 2011; Schwerdt & West, 2013), higher course grades (Crockett et al., 1989; Rudolph et al., 2001), greater feelings of academic competence (Harter et al., 1992; Rudolph et al., 2001), greater school belonging (E. M. Anderman, 2002; Holas & Huston, 2012; A. E. Schwartz et al., 2016), greater sense of safety at school (E. M. Anderman & Kimweli, 1997; A. E. Schwartz et al., 2016), and they reported fewer instances of bullying (Malone et al., 2017; A. E. Schwartz et al., 2016). Moreover, in one large scale investigation of 45,000 sixth grade students attending either a K-6 elementary school (i.e., top dogs) or a 6-8$^{th}$ grade middle school (i.e., bottom dogs), Cook et al. (2008) found that top dog sixth graders in elementary school had higher grades and significantly fewer disciplinary behavioral infractions (e.g., violence, truancy, theft) than their middle school bottom dog counterparts. In line with the TDBD, findings were interpreted as underscoring the potential risk of having sixth graders as bottom dogs in a middle school setting; since young adolescents are very impressionable, exposure to older peers who are more likely to engage in rebellious and problematic behaviors

may be cause for concern (Cook et al., 2008). Altogether, these patterns touch on evidence at both ends of the TDBD phenomenon – that students who are bottom dogs are more likely to face challenging circumstances as the newest and youngest students in their school, whereas top dog students are more likely to experience an advantageous school environment.

In light of compelling support for the TDBD, it is important to consider other realms of students' experiences at school that may be sensitive to their position as bottom, middle, or top. For example, research has yet to examine whether the TDBD contributes to students' classroom engagement and their relationships with their peers apart from bullying experiences. Addressing these issues is important because student engagement is considered a vital component of school motivation and success (Fredricks et al., 2004; M. Wang & Eccles, 2012a), and will provide an important window into whether differences at the school-level (i.e., students' position at top dogs) have significant implications for students' proximal experiences in the classroom. Peer dynamics are also important to investigate because peers, especially individuals considered to be popular, take on an especially important role in shaping adolescents' beliefs and behaviors at school (Dijkstra & Gest, 2015; Juvonen & Ho, 2008; Shin & Ryan, 2014; Zhang et al., 2019). Further, it is likely that engagement and social status are amenable to TDBD patterns given both have been found to vary by social context and fluctuate across development (Boor-Klip et al., 2017; M. Engels et al., 2017; Galván et al., 2011; Yibing Li & Lerner, 2011).

**The Mediating Role of Perceived Leadership and Anonymity for Students' Adjustment**

Prior research indicates that students' perceptions of their school experiences, especially around times of transition (Bronfenbrenner & Morris, 2006; Crosnoe & Benner, 2015), are important to consider when examining how adjustment changes over time. Adolescents' own construction and interpretation of their school context have been described as "critical

mediators" between these levels of school context and student adjustment (Eccles & Roeser, 2009). Further supported by social-cognitive theory (Bandura, 1986), students' perceptions and beliefs about their school environment can function as an important gateway for the school context to shape their adjustment. For instance, students vary in the number of changes that students perceive in their new school environment (Harter et al., 1992) and the number of changes is inversely related to adjustment. When students perceived more changes in their new middle school environment (e.g., greater emphasis on grades, more social comparison), they reported greater declines in motivation and increases in anxiety (Harter et al., 1992). Indeed, the extent to which students' functioning is affected by the timing of the middle school transition and school grade span may depend on how those distal factors shape proximal contexts such as students' classroom community and individual beliefs about their role in the community (Carolan et al., 2015; Eccles, 2004; Holas & Huston, 2012).

The present study builds upon this work by directly assessing students' perceptions of the tenets of the TDBD and examining whether they could explain differences in adjustment. The tenets that we focused on were based on prior top dog literature, which suggests that top dog students are provided with greater opportunities for leadership and feel less anonymous among their peers than bottom dog students. Stage-environment-fit can serve as a useful framework to guide our investigation into the underpinnings of the TDBD. The academic and social conditions that top dog students experience at school may provide an environment that is more supportive of adolescents' needs. Greater opportunities for leadership and less anonymity among students may contribute to fulfilling adolescents' needs for autonomy and relatedness, positing a greater developmental match with their school environment, which promotes more positive adjustment (Eccles et al., 1993; Eccles & Midgley, 1989).

### *Perceptions of Anonymity*

Anonymity at school can be conceptualized as the degree to which students' feel like they know their peers and that their peers know them. A student who feels a high degree of anonymity at their school might feel like "another face in the crowd" compared to a student with a low degree of anonymity that feels like they are familiar with everyone at their school. Early work from Simmons and Blyth (Blyth et al., 1978, 1983) evaluated students' perceptions of perceived anonymity as a potential explanation for the TDBD; they found that students who made a transition to middle school felt a heightened sense of anonymity compared to students who did not make this transition. In another study (Blyth et al., 1980), they found that students who felt a high degree of anonymity at their school reported being victimized at school more often than students who felt a low degree of anonymity. These findings may be attributed to students who feel anonymous and isolated having less access to supportive and protective relationships that can potentially counter victimization (Blyth et al., 1980).

However, although this body of work has examined differences in students' feelings of anonymity based on their top dog status and begun to consider anonymity as a moderator, work has yet to examine whether anonymity can function as a mediator for explaining differences in students' adjustment. Yet, there is reason to think that anonymity will contribute to student adjustment because when students' perceive that their peers are friendly to one another and care about one another, they report greater engagement (Kilday & Ryan, 2019; Yibing Li et al., 2011), more positive beliefs about learning (Wentzel et al., 2017), and greater school belonging (K. Allen et al., 2018). Similarly, when students are neglected by their peers – that their peers do not know them or actively like or dislike them – they are more likely to report low academic and

social competence (Jackson & Bracken, 1998) and perceive less support from their peers and teachers (Wentzel, 2003).

Further, given that adolescents have increasing need for close, consistent, and meaningful relations with their peers (Eccles & Midgley, 1989; Ryan & Shim, 2008), the familiarity and less anonymity perceived by top dog students may characterize a positive developmental match. In contrast, bottom dog students that just entered a larger and more impersonal setting with many new peers, may have less access to relationships from which they can feel supported. This may reflect a greater developmental mismatch between bottom dog students' social needs and their school environment. Thus, we revisited the issue of students' perceived anonymity and examined it as a mediator between students' status in their school as top, middle, and bottom dogs along with their adjustment.

***Perceptions of Leadership***

Leadership at school can be conceptualized as the degree to which students feel like they can make a positive contribution to their school community and that their peers look up to them. Research about how leadership can contribute to adjustment at school is limited; though, anecdotal evidence from teachers suggests they feel it is important to give older students opportunities to be leaders and mentor younger students to build school community (Stecz, 2009). This was especially true for eighth graders in K-8 schools where they are the next closest authority to adults at school, so younger students are likely to view older students as role models. Leadership is also thought to promote positive adjustment. Adolescents who participated in a mentoring program where they mentored and supported elementary students reported that they gained communication skills such as how to be sensitive to individual differences and how to form positive new relationships (Coyne-Foresi & Nowicki, 2021). These youth also reported

feeling more involved at school, felt like they had special relationships with teachers and staff, and felt more welcome and connected to their school.

Adolescents' have an increasing desire to be granted more responsibilities and autonomy (Eccles & Midgley, 1989), so feeling like a leader at school may help to fulfill these needs. For example, top dog students may be afforded greater opportunity to mentor and be leaders to the younger students at their school. Top dog students may also be invited to help their teachers co-construct the norms and expectations of their classrooms. For the present study, we developed a novel survey measure to capture students' perceptions of their role as a leader at their school to investigate these assumptions. We expected that top dog students would have the greatest perceptions of leadership and that these perceptions would be positively linked with adjustment.

**School Context and Individual Student Differences**

Finally, to gain more information about the TDBD phenomenon, we considered how contextual and individual differences might contribute to different perceptions at school. For example, it may be that school size plays an important role in the TDBD. Often in the U.S., several small elementary schools combine into one larger middle school; therefore, students are transitioning from top dogs to bottom dogs while they are also moving from a smaller to a larger school environment. Students who attend large schools are more likely to perceive an impersonal environment among their teachers and peers (Crosnoe et al., 2004; Eccles et al., 1991). Students can more easily feel disconnected and get lost in the shuffle of a large environment, which can take a toll on how well they are able to engage academically and socially at school. Smaller schools, in contrast, afford students a more intimate setting where they can form close relationships with peers and receive more individualized attention from teachers (Juvonen et al., 2004; Lee & Loeb, 2000). Encountering large school environments with many new and older

peers has been put forth as a suggestion for why bottom dogs feel more threatened and perceive a more negative school climate (Simmons & Blyth, 1987); thus, the impact of the TDBD has the potential to be exacerbated depending on the larger size of students' new school.

Prior research has yielded mixed findings regarding how individual differences play a role in how students' cope with the transition to middle school. First, with regard to gender, some research has found that the transition has a greater negative impact for boys than girls regarding academic and social functioning (Akos & Galassi, 2004b; Cillessen & Mayeux, 2007), while others have found greater negative impacts for girls (Brass et al., 2019; Crockett et al., 1989; Simmons et al., 1979). Though, some studies find no gender differences in adjustment across the transition (Harter et al., 1992; Kingery et al., 2011; Ryan et al., 2013; Seidman et al., 1994). Socioeconomic status can also play a role in how students' experience the transition to middle school. For the most part, students who come from low socioeconomic backgrounds tend to experience greater challenges across the transition, likely due to increased and compounded levels of stress and anxiety (Nelemans et al., 2018). Prior research has found that students from low income families show greater declines (or smaller yearly gains) in achievement than their middle or high income counterparts across the transition (Akos et al., 2015; M. Engels et al., 2019). Give this range of findings, students' gender and socioeconomic status will be accounted for when examining how the TDBD might shape adjustment.

**Study Research Questions and Hypotheses**

Three primary research questions comprised the present study. *Figure 4.1* displays a conceptual model used for investigating these questions.

***Research Question 1 (RQ1)*:** Do top dog students report greater feelings of *belonging* and *safety* than non-top dog students (i.e., bottom and middle dog students)?

Based on prior research that has compared same-age students that hold different positions as top, middle, and bottom dogs (e.g., Cook et al., 2008; Schwartz et al., 2016), we expected top dog students to report greater feelings of school belonging and safety at school than their non-top dog counterparts. We expected these patterns to be significant even after accounting for individual and contextual factors (gender, grade, SES, grade size).

***Research Question 2 (RQ2)*:** Are there differences between top dog, middle dog, and bottom dog students' reports of classroom engagement (*behavioral* and *emotional*) and beliefs about peer popularity (endorsement of *responsible* or *rebellious* behaviors)?

Since engagement and popularity are sensitive to changes across academic contexts and across development (Galván et al., 2011; M. Wang & Eccles, 2012a), we expected the TDBD to apply to these domains. We hypothesized that top dog students would report greater behavioral and emotional engagement than bottom and middle dog students, as well as more positive peer popularity dynamics, meaning they would report greater endorsement of responsible behaviors, less endorsement of rebellious behaviors.

***Research Question 3a (RQ3a)*:** Do top dog students feel less *anonymous* and/or feel more like *leaders at their school* than non-top dog students?

***Research Question 3b (RQ3b):*** Do these perceptions mediate associations between top dog status and adjustment?

In line with prior theoretical research that gave rise to the TDBD (Blyth et al., 1983; Simmons & Blyth, 1987), we expected that top dog students would report feeling more like leaders at their school and less anonymous at school than middle and bottom dog students. Further, given that the TDBD is potentially one of several important contributors to students' adjustment as they transition to middle school and traverse through their schooling, we expected students' perceived anonymity and perception of leadership to partially mediate the relation between top dog status and student adjustment. We expected perceived anonymity and leadership perceptions to be equally important for student adjustment.

## Methods

### Participants and Schools

Participants were 1,400 fifth or sixth grade students (46% fifth; 54% sixth). This sample was evenly split by gender (50.3% girls, 49.7% boys), had little racial heterogeneity (87% White, 4% Black, 6% Latinx, 3% other), and slightly less than half of the students (42%) were considered to be economically disadvantaged (e.g., qualified for free/reduced price lunch). All students attended schools that were part of the same intermediate school district in a rural, Midwest U.S. county. Schools in this district included a variety of grade span structures; 45% were bottom dogs (youngest in their school), 27% were middle dogs (neither the youngest or oldest in their school), and 28% were top dogs (oldest in their school). Participating students attended elementary schools that served kindergarten-fifth grades ($N$ = 258; 4 schools), kindergarten-sixth grades ($N$ = 235; 3 schools), middle schools that served $5^{th}$ -$8^{th}$ grades ($N$ = 549; 2 schools) or

middle schools that served 6th-8th grades (*N* = 358; 2 schools). The elementary schools served ~40-60 students per grade and the middle schools served ~100-180 students per grade. See *Table 4.1* for a detailed breakdown of students' school type and top dog positions.

**Procedure**

This survey was developed in partnership with the school districts to help them gain insight into their students' experiences with their schoolwork, teachers, and peers. In the weeks before survey administration, school personnel communicated with students' families about the nature of the project and their child's participation. The research team provided their contact information for parents to reach out with questions and copies of the survey were made available on request. During the spring semester (March-April), students completed the surveys online at school either on individual laptops in their classroom or in the school's computer lab. Teachers administrated the survey to their class using instructions provided by the research team. Students were told that their participation was voluntary, all of their answers would be kept private, it was not a test, and that their answers could help improve their experiences at school. Students took 20-30 minutes to complete the survey. After students completed the surveys, the research team produced deidentified data-driven reports for school personnel that could be used to guide conversation for school improvement efforts. A shared data agreement with the school district regulated the use of these data for research. These analyses are classified as non-regulated human research according to the Code of Federal Regulations (45 CFR 46.102 (l)) and the University's institutional review board.

**Measures**

Students responded to all survey items on a five-point scale (1 = not at all true, 5 = very true).

***Adjustment Outcomes***

To assess general adjustment at school, we used two common, validated scales to measure students' sense of *school belonging* (Goodenow, 1993) and *school safety* (M. P. Steinberg et al., 2011). School belonging was assessed with 5-items ($\alpha$ = .83; i.e., "I feel like a real part of my school") and school safety was assessed with 4-items ($\alpha$ = .89; i.e., "I feel safe in my classrooms").

Two dimensions of engagement (Skinner et al., 2009), *behavioral engagement* and *emotional engagement,* captured students' classroom experiences. Behavioral engagement was assessed with 4-items ($\alpha$ = .80; i.e., "When I'm in class, I participate in class discussions") and emotional engagement was assessed with 4-items ($\alpha$ = .90; i.e., "I enjoy learning new things in class").

To assess peer relations, students reported on two dimensions of popularity beliefs (Kiefer & Ryan, 2011) following the anchor, "In this class, the students who are popular are the ones who…" Students' endorsement of *responsible* behaviors for popularity was assessed with 3-items ($\alpha$ = .78; i.e., "try hard to improve their learning") and endorsement of *rebellious* behavior ($\alpha$ = .87; i.e., "don't follow the rules") was assessed with 4-items.

***Perceived Anonymity and Leadership***

Two additional constructs were added to assess the mechanism of the top dog-bottom dog phenomenon. Students' reports of *perceived anonymity* were measured using a 3-item scale ($\alpha$ = .84; i.e., "At this school, most students don't seem to know who I am") developed by Simmons, Blyth, and colleagues (Blyth et al., 1978). A novel measure was developed to assess students' perceptions of *leadership*. Items were refined to specifically pertain to students' experiences with leadership opportunities in their school with 3-items ($\alpha$ = .86; i.e., "I am a leader at my school"). Readability tools in Microsoft Word (i.e., Flesch-Kincaid) and piloting with early adolescent students were utilized to ensure that the final items were worded at an appropriate reading level.

**Analytic Strategy**

Means and correlations of all variables of interest were first examined to discern overall patterns in the data. *Figure 4.1* displays the conceptual model used to assess our main research questions. We began by assessing whether students' school position (bottom, middle, or top) predicted differences in six indicators of their self-reported adjustment (school belonging, school safety, behavioral engagement, emotional engagement, popularity dynamics: responsible, popularity dynamics: rebellious) with linear regression analyses. Gender (0 = girls, 1 = boys), grade level (0 = $5^{th}$ grade, 1 = $6^{th}$ grade), grade size, and socioeconomic status (0 = not disadvantaged, 1 = disadvantaged) were added as covariates. Differences between bottom, middle, and top dogs were assessed with dummy codes – the first set of models used bottom dogs as the reference group and the second separate set of models used middle dogs as the reference group to examine all possible combinations. Then, using the same procedure and covariates, we assessed whether top dog status predicted perceptions of leadership and perceptions of anonymity.

With 11 schools, there were too few groups to conduct a multilevel level model and with intraclass correlation coefficients (ICCs) for our dependent variables ranging between .03 - .09 ($M_{ICC}$ = .052). Therefore, students' school membership was not included in the final models. Finally, we tested for mediation by examining whether leadership and/or anonymity explained the associations between top dog status and adjustment. Mediation models were tested using the Process macro (model 4; Hayes, 2013) for SPSS. Indirect effects were assessed with the bootstrapping method using 5000 bootstrap samples. Confidence intervals (95%) were computed, and the indirect effect was considered significant if zero was not contained within the lower and upper interval.

## Results

### Descriptive Statistics and Correlation Analyses

Means, standard deviations, and bivariate correlation analyses between all study variables for the entire analytic sample are presented in *Table 4.2*. All outcome variables were significantly and positively correlated to one another, except for endorsement of rebellious behaviors for popularity which yielded all significant negative correlations. Students' perceptions of leadership were positively associated with their reports of school belonging, school safety, both types of engagement, endorsement of responsible behaviors, and negatively associated with endorsement of rebellious behaviors for popularity. The opposite pattern was found for students' perceptions of anonymity; significant negative associations were found with all outcomes except for a positive association with endorsement of rebellious behaviors.

### RQ1 and RQ2: Differences in Adjustment based on Students' Top Dog Position

Regression analyses revealed significant differences by students' top dog status for all six outcome variables (see *Table 4.3*). Related to RQ1, after accounting for gender, grade, grade size, and economic status, results revealed top dog students reported greater adjustment than bottom and middle dog students for school belonging [$\beta$ = .12, $p$ = .004; $\beta$ = .15, $p$ < .001 respectively] and school safety [$\beta$ = .17, $p$ < .001; $\beta$ = .20, $p$ < .001 respectively]. Related to RQ2, top dogs reported greater engagement than bottom and middle dog students for behavioral engagement [$\beta$ = .10, $p$ = .02; $\beta$ = .08, $p$ = .03 respectively], and emotional engagement [$\beta$ = .15, $p$ < .001; $\beta$ = .14, $p$ < .001 respectively]. For school belonging, school safety, and engagement, there were no significant differences between bottom and middle dog students [$\beta$'s ranged -.03 - .04, $p$'s all nonsignificant].

Also related to RQ2, for popularity, middle dog students had the lowest endorsement of responsible behaviors as characteristic of popularity; their endorsement was significantly lower than bottom dog students ($\beta$ = .12, $p$ = .007) and top dog students ($\beta$ = .14, $p$ < .001), but the difference between bottom and top dog students was not significant ($\beta$ = .04, $p$ = .38). Middle dog students had the highest endorsement of rebellious behavior as characteristic of popularity, followed by bottom dogs ($\beta$ = -.08, $p$ = .048), and the lowest endorsement from top dogs ($\beta$ = -.27, $p$ < .01). The difference between the latter two groups (bottom and top dogs) was also significant; top dogs endorsed rebellious behaviors significantly less than bottom dogs ($\beta$ = -.20, $p$ < .001). Differences between bottom, middle, and top dogs are displayed in *Figure 4.2.*

Several significant individual differences emerged for the model covariates. Regarding gender, girls reported feeling a greater sense of school safety ($\beta$ = -.09, $p$ < .001) and behavioral engagement ($\beta$ = -.10, $p$ < .001) than boys. Regarding grade differences, fifth graders reported more positive adjustment than sixth graders with greater school belonging ($\beta$ = -.12, $p$ = .001), emotional engagement ($\beta$ = -.18, $p$ < .001), greater endorsement of responsible behaviors ($\beta$ = -.14, $p$ < .001), and less endorsement of rebellious behaviors ($\beta$ = .29, $p$ < .001). Compared to their non-disadvantaged counterparts, students who are economically disadvantaged reported lower school belonging ($\beta$ = -.17, $p$ < .001), lower school safety ($\beta$ = -.13, $p$ < .001), lower behavioral engagement ($\beta$ = -.21, $p$ < .001), lower emotional engagement ($\beta$ = -.06, $p$ = .02), and greater endorsement of rebellious behaviors ($\beta$ = .09, $p$ = .001). Students who attended schools with larger grade populations reported greater school belonging ($\beta$ = .11, $p$ = .018), school safety ($\beta$ = .18, $p$ < .001), emotional engagement ($\beta$ = .18, $p$ < .001), and less endorsement of rebellious behaviors ($\beta$ = -.31, $p$ < .001), than students who attended smaller schools. All other differences were not significant.

**RQ3a: Differences in Leadership and Anonymity based on Students' Top Dog Position**

Significant differences by students' top dog status were found for both perceived leadership as well as perceived anonymity after accounting for covariates (see *Table 4.3* and *Figure 4.3*). In line with hypotheses, top dog students reported perceived leadership than middle dogs ($\beta$ = .22, $p$ < .001) and bottom dogs ($\beta$ = .27, $p$ < .001). However, there were no differences between the latter two groups ($\beta$ = .06, $p$ = .12). Regarding perceptions of anonymity, top dogs reported feeling least anonymous, with significantly lower perceptions than middle dog students ($\beta$ = -.10, $p$ = .005), and with a trend toward having significantly lower perceptions of anonymity than bottom dog students ($\beta$ = -.08, $p$ = .06). Perceptions of anonymity did not significantly differ between middle and bottom dog students ($\beta$ = .02, $p$ = .57).

Regarding covariates in the model, several showed significant differences. Girls reported greater anonymity than boys ($\beta$ = -.05, $p$ = .042), but there were no gender differences for leadership ($\beta$ = -.03, $p$ = .26). Fifth graders reported greater leadership ($\beta$ = -.10, $p$ = .004), but also more anonymity ($\beta$ = -.08, $p$ = .016) than sixth graders. Non-disadvantaged students reported higher perceptions of leadership ($\beta$ = -.16, $p$ < .001) and lower perceptions of anonymity ($\beta$ = .15, $p$ < .001) than disadvantaged students. Students who attended larger schools felt more anonymous ($\beta$ = .14, $p$ = .002), but there were no school size differences for leadership.

**RQ 3b: Mediation Analyses**

Mediation models with perceptions of leadership and perceptions of anonymity as mediators were run separately. These results should be interpreted with caution given the cross-sectional design of the present study. All results are presented in *Table 4.4.*

***Perceptions of Leadership***

Indirect effects for perceptions of leadership were significant for all six outcomes. Perceptions of leadership fully mediated associations between top dog status and school belonging, behavioral engagement, emotional engagement, and endorsement of responsibility for popularity. For these models, the direct effect between top dog status and the outcome became statistically insignificant when leadership was entered as a mediator into the model. Students who were top dogs reported greater leadership, which in turn predicted greater positive adjustment. Partial mediation by perceptions of leadership was found for associations between top dog status and school safety and endorsement of rebellious behaviors for popularity. Direct effects for top dog status and school safety and endorsement of rebellious behaviors remained significant at $p < .05$ when leadership was entered as a mediator.

### *Perceptions of Anonymity*

Indirect effects for perceptions of anonymity were significant for all six outcomes. The association between top dog status and endorsement of responsible behaviors was fully mediated by perceptions of anonymity. In other words, being a top dog reduced perceptions of anonymity, and lesser perceptions predicted greater endorsement of responsible behaviors for popularity. Partial mediation by perceptions of anonymity was found for associations between top dog status and perceptions of perceptions of school belonging, school safety, behavioral engagement, emotional engagement, and endorsement of rebellious behaviors for popularity. For these models, the positive associations between top dog status and belonging, safety, and engagement, and the negative association between top dog status and endorsement of rebellious behaviors were still significant at $p < .05$ when anonymity was entered as a mediating variable.

## Summary of Results

In line with expectations, top dog students reported more positive adjustment than bottom and middle dog students for all six adjustment outcomes. Bottom and middle dog students reported similar adjustment apart from their perceptions of what behaviors garner popularity; middle dog students reported lower endorsement of responsible behaviors and greater endorsement of rebellious behaviors for popularity than bottom dog students. Students' top dog position was important for adjustment even when accounting for important covariates like gender, socioeconomic status, grade, and grade size. Regarding potential explanations for the TDBD, top dog students reported greater perceptions of leadership and less anonymity than middle and bottom dogs. There were no differences between middle and bottom dogs regarding leadership and anonymity. Perceptions of leadership fully mediated associations between top dog status and four adjustment outcomes (and partially mediated associations with the other two outcomes), suggesting that leadership is a key component of the TDBD. Perceptions of anonymity partially mediated associations between top dog status and almost all outcomes, suggesting that anonymity is an important, but insufficient factor for explaining differences between top, middle, and bottom dog students.

## Discussion

The transition to middle school coincides with several other important biological, psychological, and social changes that are normative during adolescence, and as such this transition has been the subject of much research for decades (Eccles et al., 1993; Juvonen et al., 2004; Simmons & Blyth, 1987). Changes in students' academic adjustment are also common across this transition, quite often marked by declines in achievement, engagement, and motivation (Eccles et al., 1984; Ryan et al., 2013; Wigfield et al., 1991). One hypothesis for why students experience changes in their adjustment across the transition to middle school is derived

from the top dog-bottom dog phenomenon (TDBD), that students move from being the oldest in their elementary school (top dogs) to the youngest in their middle school (bottom dogs), which may elicit declines in well-being (A. E. Schwartz et al., 2016; Simmons et al., 1979). With a large sample of fifth and sixth grade students who represented bottom, middle, and top dogs, the present study investigated the TDBD in the realms of general adjustment at school, classroom engagement, and peer popularity dynamics. Th present study comprises the first attempt to empirically test two of the hypothesized mechanisms which underly the TDBD – that top dog students are more well-adjusted than middle and bottom dog students because they are afforded additional leadership opportunities and greater familiarity among peers (i.e., less anonymity).

**Top Dog Status Contributes to Student Adjustment**

In line with hypotheses, results supported the TDBD phenomenon; students who were the same developmental age reported more positive adjustment if they attended a school where they were the oldest students in their school (top dogs) than if they attended a school where they were in the middle (middle dogs) or youngest in their school (bottom dogs). Similar to prior research investigating the TDBD (E. M. Anderman & Kimweli, 1997; A. E. Schwartz et al., 2016), we found that top dog students reported greater feelings of school belonging and that they felt safer at school compared to bottom and middle dogs. Since top dog students have likely spent several years at their school, they have had more time to develop a connection and feeling of pride for their school. More time can also bring greater familiarity and comfort in one's schooling environment which can enhance feelings of belonging and safety. This pattern emphasizes the importance of students' relative social position at their school (i.e., whether they are a top dog) in shaping how students perceive their experiences and adjustment at school.

***Top Dog Status Matters for Engagement and Popularity Dynamics***

Findings from the present study also demonstrated that the TDBD extends beyond general adjustment at school, but also into their classroom academic engagement and popularity dynamics. Beginning with engagement, we found that top dog students reported being more behaviorally and emotionally engaged with their schoolwork than their non-top dog counterparts. To be behaviorally and emotionally engaged means students feel that they actively participate in class, pay attention, and enjoy going to class (Fredricks et al., 2004). One reason engagement was higher among top dog students may stem from top dogs having a greater sense of relatedness to their peers and teachers which is known to enhance engagement (Furrer & Skinner, 2003). By having greater familiarity and comfort at school, top dogs may have had greater access to supportive relationships. In turn, top dogs may be able to dedicate more energy towards their schoolwork, have more confidence, and ultimately engage more in their classes. This idea is further supported by the present study's mediation analyses which found that top dogs had enhanced feelings of leadership and less anonymity which predicted greater engagement.

Popularity dynamics were also sensitive to students' grade position in their school. The behavioral characteristics associated with popularity were generally positive among top dog students; they were more likely to report that popular students were academically responsible and less likely to report that popular students were rebellious than bottom and middle dog students. Popular peers are especially powerful and influential, so the behaviors of popular peers can have important implications for students' adjustment (Cohen & Prinstein, 2006; Juvonen & Ho, 2008). Prior research has found that the behaviors that define popularity can trend toward aggression and away from trying hard in school as students progress through early adolescence, especially across the transition to middle school (Galván et al., 2011). This reflects that as individuals' norms and values change, so too do popularity dynamics (Coie et al., 1990). Perhaps

as top dog students, students know their peers well and do not need to resort to aggression and rebellious behaviors to stand out or gain prestige and influence among them. This differs from values that bottom dogs espouse towards such rebellious behavior as being popular. It may be that bottom dogs feel more compelled to find their place within a new social hierarchy and thus resort to rebellious behaviors in a time of social upheaval and uncertainty (Brass & Ryan, in press). Taken together, the present findings illustrate that students' grade position represents an important social context that has implications for early adolescents' development.

### *Few Differences between Bottom and Middle Dogs*

Interestingly, we found that top dog students had significantly better adjustment than middle and bottom dogs for all six outcomes, but for school belonging, school safety, behavioral, and emotional engagement, there were no differences between bottom and middle dog students. Possibly, these findings reflect that there is a significant boost in adjustment from being a top dog, whereas differences between other grade positions are less pronounced. This is somewhat surprising because some research suggests bottom dog students would have the worst school adjustment because they are likely to feel vulnerable in a new and often larger space, feel intimidated by older peers, and in the case of the middle school transition, need to also cope with the transition from being a top dog to a bottom dog (Cook et al., 2008; Simmons & Blyth, 1987). However, of the handful of studies that have compared same age students, most samples include students who are top and bottom dogs only, so our inclusion of middle dog students adds new information and suggests TDBD patterns can be interpreted as top dogs experiencing an especially positive school environment rather than bottom dogs experiencing an especially negative environment.

A similar conclusion was put forth by Schwartz et al. (2016), a study which investigated perceptions of school safety, bullying, and belonging among top, middle, and bottom dog students in the New York City public school system. They found that significant differences in students' adjustment were primarily driven by the boost from students' status as top dogs, though with a large sample, they also detected some differences between middle and bottom dogs. In the present study, the only significant differences detected between middle and bottom dogs was for popularity dynamics; middle dog students actually endorsed responsibility less and rebelliousness more as characteristic of popularity than top dogs and bottom dogs. Perhaps popularity dynamics were most maladaptive for middle dog students because they are trying to stand out, and do not have the benefits of being a top dog, or the extra support for challenges that come with being a bottom dog, though more research is certainly needed to elucidate the experiences of middle dog students.

### *Student Adjustment and Demographic Group Differences*

Several important demographic differences emerged in our investigation into the TDBD. The first were significant differences between fifth and sixth graders, indicating that fifth graders reported greater school belonging, emotional engagement, more adaptive popularity dynamics, but also greater feelings of anonymity than sixth graders. These findings are interesting, given that one might expect there to be significant differences between fifth graders and sixth graders if students make a middle school transition between these years (Brass et al., 2019), but the present study suggests a potential developmental difference since students in this sample could make their transition after fourth, fifth, or sixth grade. This may be in relation to more youth entering puberty in sixth grade, more anxiety, further brain and cognitive development than in fifth grade which can contribute to greater uncertainty and worry in school (Blumenthal et al., 2011; Carter,

2015). However, more research including fifth and sixth grade students who attend schools with a variety of different structures is needed to better tease apart developmental differences. Future research may also consider students' grade level as a moderator to examine whether there is an optimal grade to be a top dog. For example, sixth graders might benefit more from being a top dog than fifth graders because there are more grades below them and more time to look forward to becoming a top dog (referred as "heap size," Schwartz et al., 2016).

Much like previous research in early adolescence, our study found mixed results pertaining to gender; gender differences emerged only for behavioral engagement, school safety, and anonymity favoring girls. The gender differences present in our study may indicate that girls are more likely to value greater intimacy in their friendships leading to less feelings of anonymity. Girls are also often socialized to listen, follow the rules, and pay attention in class leading to greater engagement (Pomerantz et al., 2002; Rose & Rudolph, 2006). Boys are more likely to encounter physical victimization and aggression, perhaps contributing to why they feel less safe across locations in school (Zimmer-Gembeck et al., 2005). Results pertaining to school size were also rather inconsistent, but most favored students who attended larger schools rather than smaller schools. This is perhaps because students have greater access to a wide variety of peers with whom they can become friends. They might also have access to more courses and resources that appeal to their individual interests more so than students from smaller schools (Lee & Loeb, 2000). Results pertaining to socioeconomic status were quite consistent in favoring non-disadvantaged students, as expected, likely reflecting additional stress that might come from poverty and/or having less access to resources that contribute to greater performance and confidence in school (McLoyd, 1998; Niehaus et al., 2012). However, we note the robustness of the TDBD in light of each of these demographic differences.

**Importance of Leadership and Perceived Anonymity**

The next question addressed by the present study is *why* top dog students may have had more positive adjustment overall than middle and bottom dogs. Our findings offer new insights into the potential mechanisms of the TDBD. Specifically, we found that top dog students reported that they felt more like leaders and role models at their school and that they felt more known (less anonymous) than bottom and middle dog students. Anonymity and opportunities for leadership had been speculated as potential reasons for why top dogs perceive a more positive environment at school, but had yet to be explicitly tested (Blyth et al., 1983; A. E. Schwartz et al., 2016). We found that both aspects are important even after accounting for demographic factors known to be important for how students perceive their environment such as gender, grade level, grade size, and socioeconomic status. Interestingly, our results suggest that perceptions of leadership and anonymity do not show a "linear" relationship with bottom dogs showing the lowest perceptions and top dog students having the highest perceptions. Rather, middle dog students reported that they felt most anonymous in our sample. Akin to the present findings about popularity dynamics, perhaps middle dog students feel more lost among the shuffle of students at their school because they do not have the familiarity and comfort of being a top dog or the scaffolded social opportunities (e.g., new student social mixers and attention) that sometimes come with entering a new school as a bottom dog.

In line with social cognitive theory (Bandura, 1986) and hypotheses, we found that perceptions of anonymity and leadership were important for explaining differences in students' adjustment. Students' perceptions of leadership fully mediated relations between students' top dog status and all six outcomes of adjustment, suggesting it is a very important factor in explaining the TDBD. Perceptions of anonymity are also quite important, though to a lesser

extent given our findings of partial mediation, which indicate top dog status still has a direct effect on adjustment when accounting for anonymity. It is likely that students are able to feel more like leaders and more well-known among their peers as top dogs because they are given more opportunities to have mentoring roles for younger students and perhaps are afforded extra responsibilities at school since they are the next oldest group compared to teachers. In line with stage-environment-fit perspective, having these opportunities and perhaps feeling special and important at school gives top dog students more confidence and fulfills their developmental needs for relatedness and autonomy (Eccles et al., 1993; Eccles & Midgley, 1989), which can promote positive adjustment. Leadership might also promote positive interactions with peers because others will be more likely to seek them out as learning partners, which can also enhance engagement (Wentzel, 2017). However, we cannot be certain of the directionality of these associations with the present study's cross-sectional design. It may be that when youth are more engaged and feel like they belong at school, they then feel more like a leader and feel less anonymous. Future research should incorporate longitudinal designs to better tease apart how these processes unfold.

Furthermore, the novel measure of leadership developed for this study taped into students' general feelings about leadership, but it would be very worthwhile to ask students directly about their opinions about their position in school and examine how these perceptions change from grade to grade. It is likely that mentoring experiences and feeling an extra sense of responsibility at school contributes to one's identity as a top dog, but there are likely other factors that are unique to each school context that would be important to capture. These facets may be leveraged as interventions to give students' more support at school because not all students can be top dogs

at one time, but if we had a better idea of what experiences are most important to being a top dog, we can try to give more students the opportunity to *feel* like a top dog.

**Study Strengths and Limitations**

The present study was unique in that we recruited students who were the same developmental age (fifth or sixth grade), but attended different kinds of schools. With this sample, we were able to discern differences in adjustment between same age students who spanned bottom, middle, and top dog positions. We also developed a novel measure of students' perceptions of leadership to test whether this could explain differences in bottom, middle, and top dog students' experiences at school. This measure proved to be crucial for explaining how students' position at school is associated with their feelings regarding school belonging, school safety, engagement, and popularity dynamics. The present study is also unique in its inclusion of adjustment outcomes that span several facets of development. Had we only investigated school belonging or safety, nuanced differences in student's peer dynamics would have gone undetected.

However, the results of this study should be considered in light of several important limitations. First, the present study was cross-sectional, so we could only provide a first look at how these factors might be related, but we could not fully determine the nature of the mediational processes since all factors were assessed at the same timepoint. We could not account for students' experiences across the transition to middle school (or lack thereof depending on the grade spans of schools in their district), and it is possible that whether or not students experienced a change in their top dog status (top to bottom, bottom to middle, etc.) will contribute to their adjustment. Future research should utilize longitudinal data to fully examine whether leadership and anonymity mediate the association between changes in student's top dog

status and adjustment, while controlling for prior levels of adjustment, and testing whether these associations are in the opposite direction or potentially reciprocal.

Second, though we had an impressive sample of students with diverse schooling experiences, we did not have enough participating schools to account for school membership as a level-2 variable in a multilevel model. It is possible that students' experiences as bottom, middle, or top dogs is unique to a particular school setting, and we were unable to account for this factor with our current models. Although <10% of variance in outcome measures (often <5%) could be attributed to school membership in the present work, some studies show that very little variance level-2 variance is needed to have an impact on the results (Huang, 2018). Studies that include larger samples with more participating schools are needed and might consider the value of a 3-level model (students nested in schools; schools nested within a school type).

Third, the findings of the present study can be generalized only to rural, predominantly White schools given that our sample did not include much representation from different racial groups. In future work, samples of students that are more diverse (racially, ethnically, economically, etc.) are needed to determine whether school context shapes adjustment in the same way across groups and whether students with different backgrounds interpret leadership and our measures in the same way as students in the present sample. Intersectionality of identities is another important consideration because combinations of identities, especially for people who are marginalized, likely yield unique experiences and perspectives that shape their experiences in school (Cole, 2009).

Finally, this study relied only on survey data that measured students' self-perceptions. This might have led to issues of shared method variance and inflated the magnitude of associations. This study was guided by social-cognitive theory, which emphasizes the

importance of self-perceptions for understanding how context might shape development. Using students' self-perceptions about the behaviors they believe to be associated with social status is unique as much social status research relies on peer nominations (Bukowski et al., 2017), but self-perceptions may be a more direct measure of students' opinions and may be a viable alternative to collecting peer nominations in school, which has become increasingly difficult (Mayeux & Kraft, 2017). Future work though could consider adding measures from different sources such as teachers, peers, families, or classroom observations, to provide additional angles on students' adjustment.

## Conclusions

The present study highlighted important differences in young adolescent students' adjustment based on their position in their school as a bottom dog (youngest), middle dog (neither youngest nor oldest), or top dog (oldest). Our findings that top dog students reported significantly greater school belonging, safety, engagement, and peer dynamics than bottom and middle dog students who were the same age adds nuance and complexity to decades of middle grades research (Eccles et al., 1984; Evans et al., 2018). Driving these effects was the fact that top dog students felt more like leaders and more well-known among their peers than bottom and middle dogs. The next natural question is – where do we go from here? Sweeping structural change in school districts is expensive and time consuming and it is not possible for students to all be top dogs at once. However, perhaps giving students more opportunities to have leadership roles and get to know their peers in positive settings can help students reap the benefits of being a top dog even if they do not hold that position. Several interventions of this nature have been put forth and show early promising results (Akos & Galassi, 2004a; Coyne-Foresi & Nowicki,

2021). We hope that this research paves the way for further inquiries and conversations for how schools serving any combination of grade levels can support their students.

*Table 4.1 Distribution of Student Sample across Schools and Top Dog Positions*

| | Top Dog position | | |
|---|---|---|---|
| School Grade Span | Bottom Dog | Middle Dog | Top Dog |
| K-5th | 0 | 0 | 258 |
| K-6th | 0 | 108 | 127 |
| 5-8th | 274 | 275 | 0 |
| 6-8th | 358 | 0 | 0 |
| Total *N* | 632 | 383 | 385 |

*Note.* Values in each cell represent the number of students belonging to each top dog category at each of the types of schools in the sample.

*Table 4.2 Bivariate Correlations and Descriptive Information for All Study Measures*

| | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|---|---|
| 1. School Belonging | -- | | | | | | | |
| 2. School Safety | .60** | -- | | | | | | |
| 3. Behavioral Engagement | .44** | .37** | -- | | | | | |
| 4. Emotional Engagement | .50** | .40** | .50** | -- | | | | |
| 5. Popularity: Responsibility | .24** | .21** | .19** | .30** | -- | | | |
| 6. Popularity: Rebellious | -.31** | -.30** | -.17** | -.21** | -.44** | -- | | |
| 7. Top dog Leadership | .35** | .30** | .40** | .37** | .21** | -.16** | -- | |
| 8. Perceived Anonymity | -.26** | -.22** | -.20** | -.15** | -.08** | .19** | -.26** | -- |
| *M* | 3.94 | 4.08 | 4.12 | 3.27 | 2.94 | 2.55 | 2.61 | 2.08 |
| *(SD)* | (.88) | (.98) | (.76) | (1.11) | (1.08) | (1.15) | (1.20) | (1.03) |

*Note.* Values above represent correlations between all study variables as well as descriptives for the whole sample ($N$ = 1400). * $p < .05$, ** $p < .01$

*Table 4.3 Regression Results of Top Dog-Bottom Dog Phenomenon Across all Outcomes, Perceptions of Leadership, and Anonymity*

| | School Belonging | | | | School Safety | | | |
|---|---|---|---|---|---|---|---|---|
| | *b* | *SE B* | *β* | *p* | *b* | *SE B* | *β* | *p* |
| Constant | 4.01 (3.82, 4.21) | .10 | | < .001 | 3.93 (3.71, 4.14) | .05 | | < .001 |
| Gender | -.09 (-.18, .00) | .05 | -.05 | .06 | -.18 (-.28, -.08) | .05 | -.09 | < .001 |
| Grade | -.21 (-.33, -.09) | .06 | -.12 | .001 | -.12 (-.26, .01) | .07 | -.06 | .08 |
| SES | -.30 (-.39, -.21) | .05 | -.17 | < .001 | -.25 (-.36, -.15) | .05 | -.13 | < .001 |
| Grade size | .00 (.00, .002) | .00 | .11 | .018 | .00 (.001, .003) | .00 | .18 | < .001 |
| Bot vs. Top | .23 (.07, .38) | .08 | .12 | .004 | .38 (.20, .55) | .09 | .17 | < .001 |
| Bot vs. Mid | -.06 (-.20, .08) | .07 | -.03 | .38 | -.06 (-.22, .10) | .08 | -.03 | .46 |
| Mid vs. Top | .29 (.16, .42) | .07 | .15 | < .001 | .44 (.29, .58) | .07 | .20 | < .001 |
| Mid vs. Bot | .06 (-.08, .20) | .07 | .04 | .38 | .06 (-.10, .22) | .08 | .03 | .46 |
| | Behavioral Engagement | | | | Emotional Engagement | | | |
| | *b* | *SE B* | *β* | *p* | *b* | *SE B* | *β* | *p* |
| Constant | 4.21 (4.04, 4.39) | .09 | | < .001 | 3.10 (2.84, 3.35) | .13 | | < .001 |
| Gender | -.15 (-.23, -.07) | .04 | -.10 | < .001 | -.02 (-.14, .10) | .06 | -.01 | .70 |
| Grade | -.10 (-.21, .00) | .06 | -.07 | .06 | -.40 (-.56, -.24) | .08 | -.18 | < .001 |
| SES | -.32 (-.41, -.24) | .04 | -.21 | < .001 | -.15 (-.27, -.02) | .06 | -.06 | .02 |
| Grade size | .00 (.00, .002) | .00 | .09 | .06 | .00 (.001, .003) | .00 | .18 | < .001 |
| Bot vs. Top | .17 (.03, .31) | .07 | .10 | .02 | .38 (.18, .58) | .10 | .15 | < .001 |
| Bot vs. Mid | .04 (-.09, .16) | .06 | .02 | .58 | .04 (-.15, .22) | .10 | .01 | .70 |
| Mid vs. Top | .13 (.01, .25) | .06 | .08 | .03 | .34 (.17, .51) | .09 | .14 | < .001 |
| Mid vs. Bot | -.04 (-.16, .09) | .06 | -.02 | .58 | -.04 (-.22, .15) | .10 | -.02 | .70 |
| | Popularity: Responsibility | | | | Popularity: Rebellious | | | |
| | *b* | *SE B* | *β* | *p* | *b* | *SE B* | *β* | *p* |
| Constant | 2.99 (2.74, 3.23) | .13 | | < .001 | 2.80 (2.55, 3.06) | .13 | | < .001 |
| Gender | .05 (-.07, .16) | .06 | .02 | .44 | .02 (-.10, .14) | .06 | .01 | .77 |
| Grade | -.29 (-.45, -.14) | .08 | -.14 | < .001 | .69 (.53, .84) | .08 | .29 | < .001 |
| SES | -.01 (-.13, .10) | .06 | -.01 | .80 | .20 (.08, .32) | .06 | .08 | .001 |
| Grade size | .00 (.00, .002) | .00 | .04 | .09 | .00 (-.005, -.003) | .00 | -.31 | < .001 |
| Bot vs. Top | .09 (-.11, .29) | .10 | .04 | .38 | -.51 (-.71, -.30) | .10 | -.20 | < .001 |
| Bot vs. Mid | -.25 (-.43, -.07) | .09 | -.10 | .007 | .19 (.00, .37) | .09 | .07 | .048 |
| Mid vs. Top | .34 (.17, .51) | .08 | .14 | < .001 | -.69 (-.86, -.53) | .09 | -.27 | < .001 |
| Mid vs. Bot | .25 (.07, .43) | .09 | .12 | .007 | -.19 (-.37, .00) | .09 | -.08 | .048 |
| | Perceptions of Leadership | | | | Perceptions of Anonymity | | | |
| | *b* | *SE B* | *β* | *p* | *b* | *SE B* | *β* | *p* |
| Constant | 2.57 (2.31, 2.84) | .13 | | < .001 | 1.86 (1.63, 2.08) | .12 | | < .001 |
| Gender | -.07 (-.19, .05) | .06 | -.03 | .26 | -.11 (-.22, .00) | .05 | -.05 | .042 |
| Grade | -.24 (-.40, -.07) | .08 | -.10 | .004 | -.18 (-.32, -.03) | .07 | -.08 | .016 |
| SES | -.39 (-.51, -.26) | .06 | -.16 | < .001 | .32 (.21, .43) | .06 | .15 | < .001 |
| Grade size | .00 (.00, .002) | .00 | .06 | .20 | .00 (.001, .003) | .00 | .14 | .002 |
| Bot vs. Top | .73 (.52, .94) | .11 | .27 | < .001 | -.18 (-.36, .01) | .09 | -.08 | .06 |
| Bot vs. Mid | .15 (-.04, .35) | .10 | .06 | .12 | .05 (-.12, .22) | .09 | .02 | .57 |
| Mid vs. Top | .58 (.40, .76) | .09 | .22 | < .001 | -.22 (-.38, -.07) | .08 | -.10 | .005 |
| Mid vs. Bot | -.15 (-.35, .04) | .10 | -.06 | .12 | -.05 (-.22, .12) | .09 | -.02 | .57 |

*Note.* Confidence intervals (95%) are presented in parentheses. Covariates were coded as gender (0 = girls, 1 = boys), grade (0 = 5$^{th}$ grade, 1 = 6$^{th}$ grade), SES (0 = not disadvantaged, 1 = disadvantaged). Bot = bottom dog, mid = middle dog, top = top dog students. First, bottom dogs were the reference group followed by separate models with middle dogs as the reference group to obtain all possible comparisons.

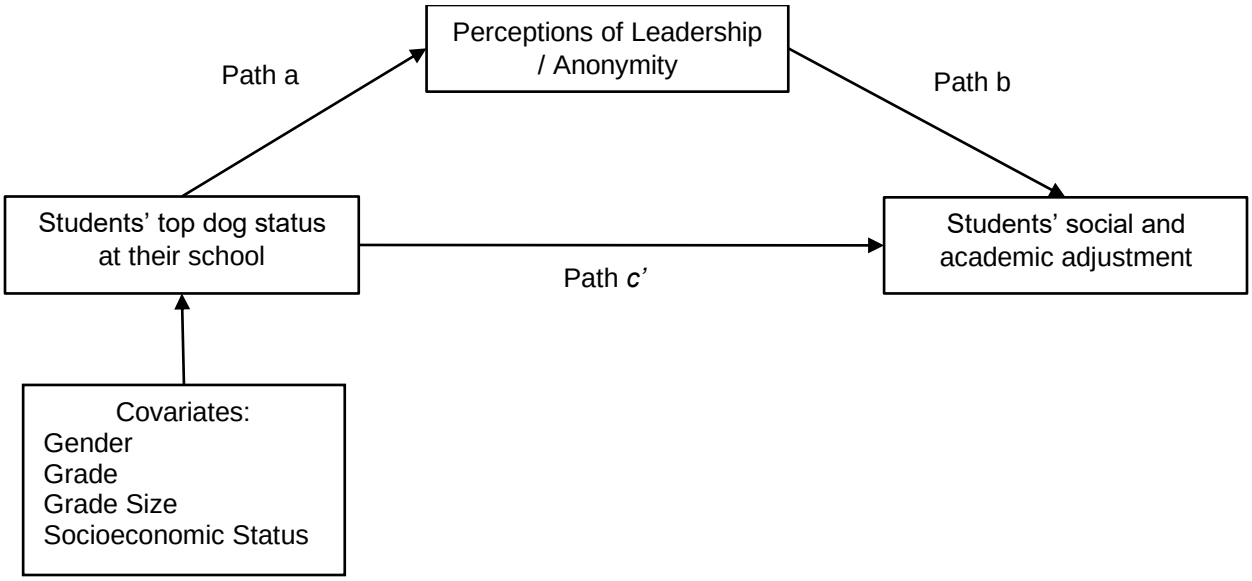
*Table 4.4 Leadership and Anonymity as Mediators for Associations between Top Dog Status and Adjustment*

| | School Belonging | | | School Safety | | | Behavioral Engagement | | |
|---|---|---|---|---|---|---|---|---|---|
| | *b* | SE | CI for *b* | *b* | SE | CI for *b* | *b* | SE | CI for *b* |
| Leadership Model | | | | | | | | | |
| Path a | .38 | .05 | [.28, .49] | .38 | .05 | [.27, .48] | .38 | .05 | [.27, .48] |
| Path b | .24 | .02 | [.20, .27] | .24 | .02 | [.20, .28] | .25 | .02 | [.22, .28] |
| Total | .13 | .04 | [.05, .21] | .20 | .04 | [.12, .29] | .09 | .03 | [.02, .16] |
| Direct (*c'*) | .04 | .04 | [-.04, .11] | .11 | .04 | [.03, .20] | -.01 | .03 | [-.07, .06] |
| Indirect | .09 | .01 | [.06, .12] | .09 | .01 | [.06, .12] | .09 | .01 | [.06, .12] |
| Anonymity Model | | | | | | | | | |
| Path a | -.10 | .05 | [-.19, -.01] | -.10 | .05 | [-.18, -.01] | -.09 | .05 | [-.19, -.01] |
| Path b | -.21 | .02 | [-.25, -.16] | -.22 | .02 | [-.27, -.16] | -.13 | .02 | [-.17, -.08] |
| Total | .13 | .04 | [.05, .20] | .20 | .04 | [.12, .29] | .09 | .03 | [.02, .16] |
| Direct (*c'*) | .11 | .04 | [.03, .18] | .18 | .04 | [.10, .27] | .07 | .03 | [.01, .14] |
| Indirect | .02 | .01 | [.002, .04] | .02 | .01 | [.002, .04] | .01 | .01 | [.001, .02] |

| | Emotional Engagement | | | Popularity: Responsibility | | | Popularity: Rebellious | | |
|---|---|---|---|---|---|---|---|---|---|
| | *b* | SE | CI for *b* | *b* | SE | CI for *b* | *b* | SE | CI for *b* |
| Leadership Model | | | | | | | | | |
| Path a | .38 | .05 | [.27, .48] | .38 | .05 | [.27, .48] | .38 | .05 | [.27, .48] |
| Path b | .33 | .02 | [.28, .38] | .19 | .02 | [.14, .24] | -.11 | .03 | [-.16, -.06] |
| Total | .20 | .05 | [.10, .30] | .06 | .05 | [-.04, .16] | -.29 | .05 | [-.39, -.18] |
| Direct (*c'*) | .08 | .05 | [-.02, .17] | -.01 | .05 | [-.11, .09] | -.24 | .05 | [-.35, -.14] |
| Indirect | .13 | .02 | [.09, .17] | .07 | .01 | [.05, .10] | -.04 | .01 | [-.07, -.02] |
| Anonymity Model | | | | | | | | | |
| Path a | -.09 | .05 | [-.19, -.01] | -.09 | .05 | [-.19, -.01] | -.09 | .05 | [-.19, -.01] |
| Path b | -.16 | .03 | [-.22, -.09] | -.11 | .03 | [-.16, -.04] | .23 | .03 | [.17, .28] |
| Total | .20 | .05 | [.10, .20] | .06 | .05 | [-.04, .16] | -.29 | .05 | [-.39, -.18] |
| Direct (*c'*) | .19 | .05 | [.09, .29] | .05 | .05 | [-.05, .15] | -.26 | .05 | [-.36, -.16] |
| Indirect | .02 | .01 | [.003, .03] | .01 | .006 | [.001, .02] | -.02 | .01 | [-.04, -.001] |

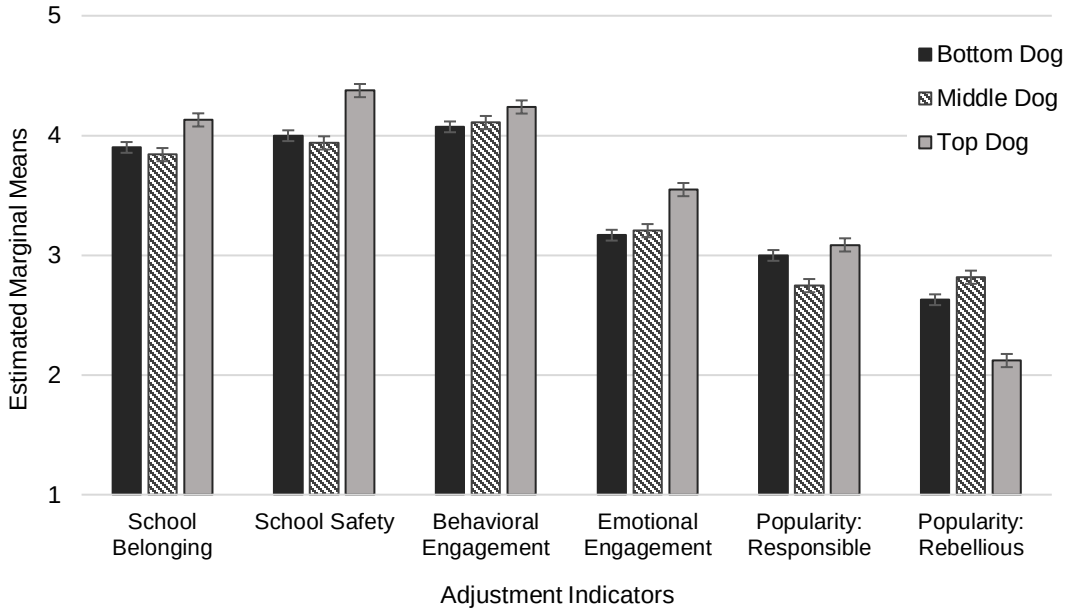
*Note.* Unstandardized estimates with standard errors are reported. CI refers to 95% confidence intervals calculated from 5,000 bootstrapped samples. Estimates are considered significant when confidence intervals do not contain zero. Path a refers to association between top dog status and mediator variable. Path b represents association between mediator variable and adjustment outcome. Gender, grade, grade size, and socioeconomic status were entered as covariates. Refer to *Figure 1*.

*Figure 4.1 Conceptual Model for Examining TDBD and Potential Mediators*



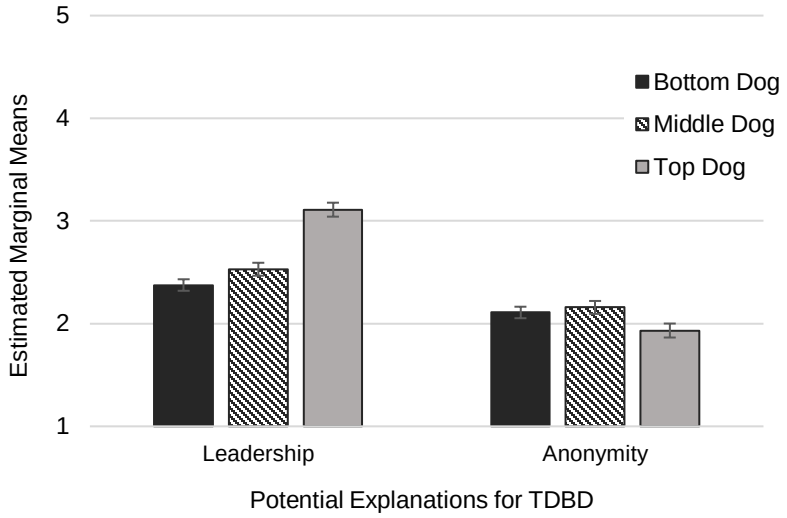

*Note.* Each of the six adjustment outcomes were run separately as were mediation models with perceptions of leadership and perceptions of anonymity.

*Figure 4.2 Differences between Top, Middle, and Bottom Dogs for Student Adjustment*




*Note.* Values for each group represent estimated marginal means which control for gender, grade, grade population size, and socioeconomic status. Error bars represent standard errors. * $p < .05$, ** $p < .01$

*Figure 4.3 Differences between Top, Middle, and Bottom Dogs for Perceptions of Leadership and Anonymity*




*Note.* Values for each group represent estimated marginal means which control for gender, grade, grade population size, and socioeconomic status. Error bars represent standard errors. * $p < .05$ ** $p < .01$

## Chapter 5 Conclusion

Decades of research have considered how adolescents' school context contributes to their development (for a review, see Eccles & Roeser, 2011). Much of this research has documented declines in adolescents' reports of academic and social well-being especially during the transition from elementary to middle school (Eccles et al., 1984; Evans et al., 2018). Additionally, there is an abundance of research documenting the importance of peer relationships during adolescence, including the powerful influence of social status that accompanies an increasing need for acceptance among one's peers (LaFontana & Cillessen, 2010; L. Steinberg, 2014). Yet, the intersection of these two lines of research has received less attention. Thus, the three studies of this dissertation sought to address the question, "How does school context contribute to changing peer relations and adjustment in early adolescence?" Collectively, results from the three studies reveal several common themes, a nuanced role of school context, and yield important theoretical and practical implications.

Prior research that has investigated trends of social status in early adolescence report mostly negative patterns, referring to social status as increasingly characterized by maladaptive behaviors like aggression and disruptive behavior, while decreasingly characterized by positive behaviors like trying hard in school and being kind to others (e.g., Bowker et al., 2010; Bukowski et al., 2000; Galván et al., 2011; North et al., 2019). Yet, findings from both studies 1 and 2 revealed nuanced patterns that paint a more optimistic picture. Results aligned with a social-skills model of social status (Stormshak et al., 1999; Wright et al., 1986), which purports that prosocial behavior is universally necessary to achieve social status. In study 1, peer

acceptance showed consistent positive relations (both over time and across school settings) with prosocial behavior and academic reputation and negative relations with physical aggression. Even though there were some context specific negative trends for popularity, the students who were well-liked among their peers were consistently perceived as kind to others and academically oriented. Similarly, in study 2, although youth's endorsement of dominance increased as a characteristic of social success while their endorsement of academic responsibility and sincerity decreased over time, sincerity was consistently believed to be the greatest predictor of social success. Collectively, these findings suggest that although there may be some negative shifts in the behaviors that define social status in early adolescence, youth still value prosocial and sincere behavior and are drawn to peers that embody these behaviors (Kiefer & Ryan, 2011).

In addition to examining changes in students' beliefs about social status, study 2 sought to investigate whether these changes had implications for school engagement. Based on much theory and research which highlight the intertwined nature of academic and social development (e.g., Ryan & Patrick, 2001; Wentzel, 2017), I expected that changes in adolescents' endorsement of the characteristics that define social success would predict changes in their reports of engagement. However, results of study 2 revealed null relations between changes in adolescents' endorsement of sincerity, academic responsibility, and dominance and changes in behavioral and emotional engagement. This was somewhat surprising given that cross-sectional within-grade level associations were found between adolescents' beliefs of social success and engagement, but these patterns did not translate into *changes* between the trajectories of social success and engagement. This suggests that adolescents' beliefs about their popular peers are important for guiding their academic behaviors, but that there are also other important factors that contribute to changes over time. Declines in engagement during adolescence are quite

common (Fredricks et al., 2004; M. Wang & Eccles, 2012a) as was the case for the majority of students in the present study, and more research is needed to gain insight into what predicts change in engagement over time. Adolescents' changing experiences with friends (Shin & Ryan, 2014; Zhang et al., 2019) and teachers (M. Engels et al., 2016; Hendrickx et al., 2017) may be important social dimensions to consider for future research.

Perhaps one the greatest contributions of the three standalone studies of this dissertation is the examination of how social status and other dimensions of peer relationships vary across school contexts. In studies 1 and 2, longitudinal trends of behavioral correlates of status and beliefs about the causes of social success, respectively, were examined among students who either made a transition from elementary to middle school (ESMS) or remained in the same school from kindergarten-eighth grade (K8). This comparison is important because much of the social status and peer relations literature has been conducted only with students who made a transition to middle school. Thus, negative trends in social status have mostly been attributed to changes experienced during the transition to middle school (i.e., encountering a larger group of peers, needing to re-establish social hierarchies), but without a comparison group of youth who did not make this transition, the contribution of school context remained unknown. I expected that K8 students would show more positive patterns of social status (less aggression, greater endorsement of academic responsibility, etc.) in line with prior work that has favored K8 students over ESMS students in the realms of achievement and self-esteem likely due to its overall more stable environment (Schwerdt & West, 2013; Simmons & Blyth, 1987).

Yet, findings between ESMS and K8 students were varied and did not unilaterally favor K8 students. For example, in study 2, adjustment declines occurred for both ESMS and K8 students. Their endorsement of sincerity declined over time as well as their reports of behavioral

and emotional engagement. These similar patterns suggest that declines in engagement and some areas of social status reflect more developmental changes in adolescence rather than changes that are specific to context. However, several longitudinal findings favored students in K8 settings; K8 students believed that their popular peers were academically oriented from sixth thru eighth grade whereas these beliefs significantly declined over time for ESMS students. ESMS students also reported that their popular behaviors exhibited dominance behavior consistently over time whereas this belief significantly declined for K8 students. Additionally, some findings that favored ESMS students. In study 1, behavioral correlates of popularity were more indicative of academic and prosocial behavior and less of physical aggression among sixth graders in elementary school than sixth graders in K8 settings. Once elementary students transitioned into middle school, patterns of popularity were slightly more adaptive for K8 students. Collectively, these nuanced findings between ESMS and K8 settings may reflect some successful middle school reform efforts that were aimed to "soften the landing" of the transition to middle school in response to much of the transition research conducted during the late 20$^{th}$ century (Carnegie Council on Adolescent Development, 1989, 1995; Juvonen et al., 2004; Lipsitz et al., 1997).

Furthermore, much of the findings across studies 1 and 2 were aligned with the top dog-bottom dog phenomenon (TDBD) – the oldest students in their schools reported the most positive academic and social experiences (A. E. Schwartz et al., 2016; Simmons & Blyth, 1987). This was especially true for K8 students in study 1; popularity dynamics gradually became more defined by academic and prosocial behavior, and less defined by aggression as students progressed toward the top dog position in their school. Therefore, in study 3, I examined school context beyond differences between ESMS and K8 students and focused on how the TDBD shaped young adolescents' experiences in school. Among fifth and sixth grade students who

represented top dogs (oldest students), middle dogs (neither oldest nor youngest), and bottom dogs (youngest students) in their school, top dogs reported more positive social status dynamics, school belonging, sense of safety, and engagement at school than middle and bottom dog students. In addition, I found that these patterns were driven by students' perceptions about their leadership role in school as well as the degree to which they feel anonymous among the peers (albeit with statistical limitations). Greater leadership and less anonymity had been speculated as potential reasons for why top dog students might report more positive experiences in school than middle and bottom dogs, but study 3 represented a first test of these assumptions. These findings provide insights not only about how the transition to middle school and school grade structures can contribute to facets of adjustment, but findings also emphasize the importance of how students perceive their social position and role at school.

**Implications and Conclusions**

Several important theoretical and practical implications arise from this dissertation. First, regarding theoretical implications, my work provides an empirical platform to disentangle the contributing roles of the middle school transition and development in youth's changing adjustment. In particular, my work across the three studies provides unique longitudinal investigations of students' adjustment across the transition from elementary to middle school, which is important because much prior work is cross-sectional or exclusively focuses in one school context – elementary or middle school. A comparison group of students who did not make a transition to middle school was also examined, which has not often been done beyond national studies of achievement since the original work by Simmons and colleagues in the 1970's. A fresh look at these phenomena was important given much of the calls for middle school reform in the 1990's in response to the original work.

Further, the present studies examined school context from the lens of the top dog-bottom dog phenomenon and began to provide information about possible mechanisms. These insights can also be connected to other well-established developmental theories like stage-environment-fit perspective, which purports that declines in school are likely when there is a mismatch between the affordances of a schooling environment and its students' developmental needs (Eccles et al., 1993). For example, perhaps when adolescents' needs for autonomy and close relationships are satisfied when they are top dogs in their school and are more familiar with their peers and have the opportunity to be role models to younger students. The novel measure developed to assess students' perceptions of leadership was reliable and may be useful for future survey work.

An additional theoretical implication concerns the similar patterns of social status dynamics that were found across studies using different methods. Study 1 utilized peer nominations which is the traditional way of assessing social status and provides important information about youth's opinions about their peers (Cillessen, 2009). However, peer nomination questions can be quite timely for participants to answer and it has become increasingly difficult to conduct this kind of research in schools (Mayeux & Kraft, 2017). Results of studies 2 and 3 utilized self-report measures of social status and yielded similar changes in the behaviors associated with social status, suggesting that this method may be a viable alternative when peer nominations cannot be collected.

Regarding practical implications of my dissertation work, examining adjustment in early adolescence is important because experiences during this time can contribute to future education and career paths as well as their approaches to future social relationships (J. P. Allen et al., 2020). Thus, it is critical that schools that serve early adolescents provide an optimal foundation

for their students. Findings across my three studies suggest that early adolescence can be a challenging time for many adolescents, even for those that do not make a transition to a middle school, indicating that additional support during this time are warranted. Interventions that focus on how to form and maintain positive relationships with peers and how to cultivate socioemotional skills could be particularly informative and helpful for young adolescents. One intervention in which teachers undergo professional development about adolescence and the importance of peer relationships has shown promising results for cultivating positive status dynamics in participating teachers' classrooms (Hamm et al., 2014).

Furthermore, my research provides information that can potentially inform conversations about school transitions and optimal grade structures. Macro-level features of schools like transitions and grade structures are important and contribute to student adjustment, but the ways in which they matter are likely through micro-level features like quality classroom instruction and daily interactions with peers and teachers. District-level change can be challenging and costly, but my work also suggests that fostering positive school climates, helping students feel like leaders, and that they are an important part of the school community would be beneficial. Taken together, my results revealed a more nuanced view of early adolescence and potentially provide insight for school policy and structures that cultivate adaptive development and peer dynamics.

# Appendices

## Appendix A Study 1 Measures

**Social Status Peer Nominations**
Think about all the students in your grade. Write the names of the students who best fit the following descriptions.

*Peer Acceptance*
The kids I LIKE MOST (like to be around)
The kids I LIKE LEAST (don't like to be around)

*Popularity*
The kids who are the MOST POPULAR (just about everyone in school knows these kids)

**Behavioral Reputation Peer Nominations**
All students act differently in school. First, think about all the students in your grade. Which students…

*Academic reputation*
work hard and get good grades

*Prosocial behavior*
are really cooperative and willing to help others

*Physical aggression*
start fights (push other kids)

## Appendix B Study 2 Measures

**Beliefs of the Causes of Social Success**
On a scale of 1 – 5 (strongly disagree – strongly agree), indicate how much you agree with the following statements.
"The students who have lots of friends and get along well with others are the ones who…"

*Sincerity*
Take time to listen to other's ideas.
Are honest.
Stand by their friends.
Never pretend to be something they are not.
($\alpha$: W1 = .68, W2 = .69, W3 = .74)
*Reliability decreases if any item is deleted

*Responsibility*
Do their homework.
Follow the teachers' rules.
Work hard at school.
Don't talk back to teachers.
($\alpha$: W1 = .80, W2 = .85, W3 = .83)

*Dominance*
Are the toughest.
Like to push people around.
Are extra forceful.
Can force others to do what they want.
($\alpha$: W1 = .73, W2 = .72, W3 = .71)

**Academic Adjustment**
On a 1-5 scale, indicate how true the following statements are for you (1 = not at all true, 5 = very true).

*Behavioral engagement*
I pay attention in my class.
When I'm in class, I participate in class discussions.
When I am in class, I listen very carefully.
I try hard to do well in school.
When we work on something in class, I get involved.
($\alpha$: W1 = .86, W2 = .85, W3 = .84)

*Emotional engagement*
My class is fun.
I enjoy learning new things in my class.

When we work on something in class, I feel interested.
When I am in class, I feel good.
In my class, I work as hard as I can.
($\alpha$: W1 = .82, W2 = .83, W3 = .79)

## Appendix C Study 3 Measures

**Top Dog Perceptions**
How true are the followings statements for you? (1 = not at all true of me, 5 = very true of me)

*Perceptions of Leadership*
I am a leader at this school.
Other students look up to me.
I am a role model at my school.
($\alpha$ = .86)

*Perceived anonymity*
I feel I don't know a lot of kids at this school.
Lots of kids don't know me at this school.
At this school, most students don't seem to know who I am.
($\alpha$ = .83)

**Student Adjustment**
How true are the following statements for you? (1 = not very true, 5 = very true)

**Note:* Academic and social adjustment measures in study 3 were similar to those used in study 2 with the addition of two measures (school belonging, school safety) and slight changes to other scales indicated below:

*School belonging*
I feel like a real part of my school.
Sometimes I feel as if I don't belong here. (reversed)
I wish I were in a different school. (reversed)
I feel proud of belonging to this school.
I am happy to be at this school.
($\alpha$ = .83)

*School safety*
I feel safe at school.
I feel safe in my classrooms(s).
I feel safe in the hallways and bathrooms.
I feel safe in the lunchroom or cafeteria.
($\alpha$ = .91)

*Behavioral Engagement*
I try hard to do well in school.
When I'm in class, I participate in class discussions.

I pay attention in class.
I complete my assigned work.
($\alpha$ = .81)
*Emotional Engagement*
When we work on something in class, I feel interested.
Class is fun.
I enjoy learning new things in class.
When I'm in class, I feel good.
($\alpha$ = .91)

**Social Status Dynamics**
How true are the following statements for you? (1 = not very true, 5 = very true)
"In this class, the students who are popular are the ones who…"

*Academic Responsibility*
Try hard to improve their learning
Ask for help
Complete their assigned work
($\alpha$ = .79)

*Rebellious/Disruptive*
Talk back to teachers
Make fun of other students
Don't follow the rules
Goof off in class
($\alpha$ = .87)

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